

**UNIVERSITY OF JYVÄSKYLÄ**

**FACTORS RELATED TO THE DIFFICULTY OF READING  
COMPREHENSION TEXTS IN THE MATRICULATION  
EXAMINATION ENGLISH TESTS**

**A Pro Gradu Thesis**

**by**

**Anu Kärkkäinen  
Sanna Pirttinen**

**Department of English  
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HUMANISTINEN TIEDEKUNTA  
ENGLANNIN KIELEN LAITOS

Anu Kärkkäinen  
Sanna Pirttinen

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Tutkielman tarkoituksena on selvittää, mitkä tekijät vaikuttavat tuloksiin ylioppilastutkinnon englannin kielen tekstinymmärtämiskokeessa. Materiaali koostuu ylioppilastutkinnon englannin A- ja B-tason tekstinymmärtämiskokeista vuosilta 1980-1995 sekä näiden kokeiden valtakunnallisista tuloksista, joita saimme käyttää ylioppilastutkintolautakunnan luvalla. Tutkielmalla on kaksi päätavoitetta: saada selville 1) vaikuttaako tekstityyppi tekstin ymmärtämiseen ja 2) mitkä luettavuuskriteerit, jos mitkään, vaikuttavat tekstin ymmärtämiseen. Pohjana ovat Egon Werlichin tekstityyppiäottelu sekä Edward Fryn määrittelemät luettavuuskriteerit. Näiden päätavoitteiden lisäksi tutkimuksen tarkoituksena on selvittää, miten luetun ymmärtäminen on kehittynyt 1980-luvun aikana.

Kaikki tekstit jaoteltiin tekstityyppien mukaan, ja niiden keskimääräiset ratkaisuprosentit laskettiin. Yksittäisten tekstien ratkaisuprosenttien perusteella valittiin viisi helppointa ja viisi vaikeinta tekstiä neljästä eri ryhmästä: A-kielen kevään ja syksyn kokeista sekä B-kielen kevään ja syksyn kokeista. Näitä tekstejä tarkasteltiin luettavuuskriteerien pohjalta ja vertailtiin keskenään kummallakin tasolla, jotta saataisiin selville, mikä tekee tekstistä helpon tai vaikean.

Tutkimuksen mukaan tekstityypillä ei ole ratkaisevaa vaikutusta tulokseen. Tulosta tulkittaessa on otettava huomioon, että tätä tutkielmaa varten tutkitut tekstit eivät jakaudu tasaisesti eri tekstityyppien kesken. Sen sijaan tutkimus osoittaa, että Fryn luettavuuskriteereissä mainitut tekijät vaikuttavat siihen, saadaanko tekstinymmärtämiskokeesta hyviä vai huonoja tuloksia. Vaikka muutaman yksittäisen tekijän kohdalla tutkimustulokset eivät vastaa odotuksia, kokonaisuutena tendenssi on kuitenkin hyvin selvä.

Asiasanat: coherence. cohesion. matriculation examination. readability. reading comprehension. text linguistics. text type.

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## 1. INTRODUCTION

This pro gradu thesis has two main aims. One purpose is to find out whether the text type affects the results of the reading comprehension test of English in the matriculation examination at the A- and B-levels. Another purpose is to see what other factors have an effect on the readability of the texts of the same examinations. The subject interests us for two reasons. We have both passed our matriculation examination in 1988, so the texts that we have read as a part of our examination belong to the data of this study. Another reason is more current. We are both studying to become teachers of English. One of us is currently working as an upper secondary school English teacher, and the other is doing her teacher training. That is why we believe that the results of this study will help us in our own work in the future.

We have used Egon Werlich's text type division that he introduces in his book A Text Grammar of English. According to Werlich, there are five text types, which are descriptive, narrative, expository, argumentative and instructive text type. These text types are presented in the background part of this study. We studied all the texts of the data and analyzed their text types. We received a permission from the Matriculation Examination Board to see the nation-wide results of all the A- and B-level English tests from 1980 to 1995. We calculated the nation-wide results for each text type in the A-level spring and autumn texts and in the B-level spring and autumn texts. Our hypothesis was that at both levels a certain text type would produce the best results, and another text type would produce the weakest results. We did not have any preconceptions as to which were the easiest and the most difficult text types. One aim of this study is to find out whether it is on the whole possible to show that a certain text type is easier than another text type.

Another purpose of the present study is to find out what other factors have an effect on the results of the examination. More precisely, we took five easiest and five most difficult texts from four different groups of the are A- and B-level spring and autumn texts. Then we compared the numbers of certain factors in the easiest and the most difficult texts in order to see whether

the factors had really had an effect on reading comprehension in these examinations. This part of the study is based on Fry's classification of the factors that affect the readability of a text. This classification is discussed later in this thesis. We also used Halliday and Hasan's studies in cohesion to support Fry's classification. Also Halliday and Hasan's theory is described more precisely below.

Our hypothesis concerning readability criteria was that Fry's factors would have an effect on comprehension in the matriculation examination. We assumed that in the most difficult texts there would be more factors that hinder the readability than in the easiest texts. We also assumed that in the easiest texts there would be more factors that help the readability according to Fry than in the most difficult texts. We wanted to see whether some of these factors would have a clearer effect than the others. We did not establish the effect of the factors on each individual text, because it is very difficult to say unambiguously what the proportion of a certain factor in a text has to be before you can say that it has affected the understanding. So we looked at the texts as groups of the easiest and the most difficult texts in the spring and autumn texts at both levels separately. We compared the average proportions of the factors in the easiest texts to the corresponding figures in the most difficult texts. Then we compared the four different groups with each other to make the conclusions more reliable.

We familiarized ourselves with the English curricula in order to see if the themes of the English courses, and of the English books used in the upper secondary school are similar to the themes of the texts in the English matriculation examination. The curricula are treated in the background part of the study.

The matriculation examination has an important role in Finnish society. Currently about 50% of the age group goes to the upper secondary school, and the majority of them pass the matriculation examination. English is still the first foreign language, the A-language, for most of the pupils. Almost all the others study it as the B-language, so a great number of people have affected the results of this study.

Chapters from 2 to 6 introduce the background information needed for this study. The text linguistic aspect is discussed in

chapter 2. Egon Werlich's text type division (1983) is introduced in chapter 3, as well as opinions from other linguists in order to lend support to Werlich's division. Fry's theory concerning readability, on which this study is based in addition to Werlich's theory, is presented in chapter 4. Chapters 5 and 6 introduce briefly the curricula of foreign languages used in Finnish schools and the position of language tests in the matriculation examination. The material and methods used in this study are introduced in chapter 7, and chapters 8 and 9 present the results of the study, concerning both the text types and the readability of the data. Finally, chapter 10 evaluates the study as a whole and gives some suggestions for further studies.

## 2. TEXT LINGUISTICS

Discourse has been studied and taught as early as the time of antiquity. According to Arffman and Brunell (1989:7), the roots of modern text linguistics are in linguistics, rhetoric and language philosophy. Text linguistics sees sentences and clauses as part of a text, not as separate units. Kinneavy writes (1971:6) that during antiquity in Greece there were physical and musical education and education in the use of language. Also Rome adopted this system of Greece. During elementary education students learned the mechanics of reading and writing. After that they passed on to the second stage of instruction, during which they were taught the elements of literary analysis. This was preparation for the function of higher education, the composition and delivery of speeches. Students could do some preparatory composition exercises. They usually read for example Homer, Aristophanes and Thucydides, and in the analysis there were four stages: the establishment of the text, expressive reading, even memorized recitation, exposition and judgement, during which students drew moral lessons from the reading.

Kinneavy (1971:7) writes that systematic higher education was started around 320 B.C. There were two ideals in the college, which were the speech-maker and the debater.

According to Lundquist (1983:119-120), rhetoric was represented by Plato and Aristotle in Greece as early as in the fifth century B.C. During the time of the ancient rhetoric it was



emphasized that language is an instrument for all the people to tell their thoughts and express their ideas in public. Language was also seen as a tool when people searched for the truth or wanted to create good things themselves. It was an important part of democracy. Webster's Ninth New Collegiate Dictionary (1990: 1011) gives rhetoric three definitions: "1: the art of speaking or writing effectively; *specif*: the study of principles and rules of composition formulated by critics of ancient times 2 a: skill in the effective use of speech b: a type or mode of language or speech; *also*: an insincere or grandiloquent language 3: verbal communication: DISCOURSE".

## 2.1. Text as the basic unit

In this study, text is the basic unit. Enkvist (1975:9) says that a text can be defined as a series of signs that has been composed according to a certain code. This definition even refers to a text consisting of sentences which are syntactically and semantically perfect but which talk about different things. It also includes a text that is a transcription of a speech event, so there may be unfinished sentences or other characteristics typical of spoken language. However, the texts that are analyzed in this study do not fit in either of these descriptions. There are sometimes interviews among the reading comprehension test texts, but the language has been changed into written form. So we can use Enkvist's (1975:9) narrower definition of a text here. The term 'text' is used to refer to a sentence or a series of sentences in which all the parts are linked with each other. The clauses and sentences of a text can also be linked with the surrounding situation. However, the data of this study tend to be independent of the context for which it has been written or chosen, because the readers are taking a reading comprehension test.

Enkvist (1975:17) says that a text is a combination of basic units which are called predications. Different linguistic mechanisms that are connected with each other establish cohesion within the text, and the reader has to analyze the connections between the predications.

Halliday & Hasan (1976:1-2) also define a text. A text can be spoken as well as written, it can be a proverb or a whole play, and

it can be a cry for help or an all-day discussion. A text is not a grammatical unit, it is a unit of language in use, and it is best defined as a semantic unit, a unit of meaning.

Text linguistics studies the factors that make a text understandable. According to Kauppinen and Laurinen (1984:19) it should not create norms. Though it may seem that text types, which are important in this study, are some kind of norms, the purpose of the text type division is not to find texts that are purely of one text type only. When we had read and analyzed our data, we realized that all the texts have characteristics of more than only one type. Most of them display the characteristics of one dominant text type, and some shorter fragments which belong to other types. There are also texts that consist of equal parts belonging to different text types so that none of them is dominant.

Moffett (1968:10) writes about the elements of discourse. According to him there are three elements: a first person, a second person and a third person. Terms like informer, informed and information can be used when it comes to written language. In this trinity there are three different relations. There is the relation of the informer to the informed, the relation of the informer to the information, and finally the relation of the informed to the information within which lie the comprehension and interpretation.

According to Lundquist (1980: 14) in a text there are three basic parts, so called "referential, predicational and illocutional" parts. This means that the purpose of a person who says or writes a text is to talk about something (referential), to say something about the subject (predicational) having a certain intention when saying or writing the discourse (illocutional).

Enkvist (1975:10) writes about the acceptability of a text, whether a text can be accepted as an understandable unit in a certain situation. The degree of acceptability can be zero or hundred or something between them, depending on how many speakers of the language in question accept expression. Acceptability is more ambiguous than the grammatical correctness. Native speakers of the same language can have different norms when they decide if a sentence is acceptable or not, because for example their social backgrounds affect their points of view. Even one person can say

that the same sentence is acceptable in a certain situation and unacceptable in another situation.

## 2.2. Coherence and cohesion

Coherence is very important for a text; it makes a text understandable. Halliday and Hasan (1976:308-324) write about cohesion and give it four different forms: reference, substitution/ellipsis, lexical cohesion and conjunction.

"Reference is the relation between an element of the text and something else by reference to which it is interpreted in the given instant", as Halliday and Hasan say. This means that in a text there can be reference items like *he, they, one, mine, its* and *this* for example. They refer to certain elements in the same text and make the text more cohesive, for example: *I can see a light. Let's follow it.* The word *it* refers to *a light*, which makes the connection of these two clauses easily understandable. The reference item *it* is specific, the light is mentioned again, although the actual word is not used. The referent, *a light* in this case does not have to be specific, but it becomes specific at the moment when the reference item is used. On the other hand, reference can also cause ambiguity and thus problems in understanding. There may be more than one possible item in the text to which the reference item could refer. For example: *Spurs played Liverpool. They beat them. They* can refer to both *Spurs* and *Liverpool*, and so can *them*. There is no reliable sign for the reader that would tell him/her which one is the right interpretation. However, often in structurally similar cases the meaning of the words leaves only one possible way to interpret the text, for example: *John wanted Bill's horse. But he wouldn't give it to him.*

Halliday and Hasan say (1976:314-318) that substitution and ellipsis are close to reference, but that there is no implication to specificity. However, in the case of substitution/ellipsis a certain word or expression earlier mentioned is not repeated or even replaced by any reference item. It is just left out when this can be done without making understanding difficult. Answers to questions are typical sentences in which substitution/ellipsis is used, for example: *Are they selling the contents? -Yes, they are.* Neither is the actual action repeated, nor is there any reference

item used to refer to the action, but nevertheless, the meaning of the answer is obvious to the reader. The difference between the substitution and the ellipsis is minimal. In the substitution a substituting word, for example verb 'do', is used, whereas in the ellipsis it is left out, for example:

Has Smith reacted to that paragraph about him in the paper?  
 a) -No he hasn't.  
 b) -He hasn't done yet.

In the answer a) the ellipsis is used, and in the answer b) the substitution is used. They are so close to each other that Halliday and Hasan put them in the same category. In addition to this kind of substitution there can also be nominal substitution. For example the word *one* can be a nominal substitute. Nominal substitution differs from reference so that in the former the word does not refer to any specific thing that would have been mentioned earlier, whereas in the latter it does:

Have an apple.  
 -I'll take this.  
 -The other one's better.

The word *one* does refer to an apple, but that particular apple has not been mentioned earlier. The word *apple* in the example means apples more generally.

The third category of Halliday and Hasan (1976:318-320) is lexical cohesion. They divide it into two groups: reiteration and collocation. Reiteration means actual repetition of a lexical item, a word, or using a synonym, and collocation means that certain word always occurs in a similar environment, i.e. with another specific word or words.

The fourth thing that Halliday and Hasan write about (1976:320-322) is conjunction. Conjunctions 'and', 'yet', 'so' and 'then' form logical relations within a text and they function as links between the elements of a text. There are also other conjunctions, but their meanings are related to these four basic words, for example words 'consequently' and 'because' are close to the conjunction 'so'.

Bange (1989:305) says that coherence makes meaningful interaction possible between the inter-actants, and thereby it establishes social harmony. He also defines coherence so that the term *continuity* could describe it better. Charolles (1989:3-14) writes about the roles of both the receiver and the utterer in his text about coherence. (In this case the term utterer refers also to the writer.) When the receiver interprets a discourse or a text, coherence is very important. A person who receives some discourse thinks automatically that it is produced in order to mean something. Also a person who produces a discursive utterance knows that it will be interpreted as expressing a certain significance. Sometimes the receiver may make a wrong interpretation in the beginning. Later he probably realizes it and goes through a re-interpretative process. Finally he finds the configuration of relations between individuals and/or states of affairs in the discourse acceptable on the basis of his idea about the utterer's aims. The utterer should distribute interpretative instructions within the discourse so that the receiver can catch its coherence.

According to Viehweger (1989:262-263), coherence used to be understood as an immanent property of language utterances, but nowadays it is rather defined as a dynamic procedure which underlies every language production. Addressees must have so-called encyclopaedic knowledge in order to be able to assess the result of text interpretations as coherent. This means that they need to have the knowledge of the real world necessary for understanding the text. There are three interacting mechanisms on which text interpretation is above all based. Receivers integrate the individual propositions to form the text meaning, then they reconstruct action goals. The third mechanism is that they interpret patterns as indicators of global coherence.

Kayser (1989:362-363) makes a distinction between intercomprehension and coherence, which are related to each other. The former is used in connection with a verbal interaction and the latter belongs to a textworld. Intercomprehension refers to the cognitive state that is (or is not) attained at a given moment, and it is evaluated subjectively by every interlocutor. Coherence, on the other hand, is the mental representation of an interpreter which he creates during the interpretation process. Thus,

coherence does not have an interactive aspect, it considers the comprehension process, whereas intercomprehension applies also to the production process.

### 2.3. Text pragmatic point of view

Besides the linguistic factors that make a text good Enkvist (1975:13,107) also writes about pragmatic factors, i.e. the world picture of the text. A text may be linguistically and grammatically correct, but still not perfectly acceptable. The reason for that could be that its world picture is different from the normal one. The following texts are suitable examples here:

My grandmother died in September 1941. I will have lunch with her tomorrow.

Now I crush this ice cube. It melted already the day before yesterday.

Everyone knows that it is impossible to do things that were said in these texts. However, it is difficult to define the conditions under which a text is pragmatically acceptable.

According to Enkvist (1975:14,106) a text can sometimes be natural and acceptable in a certain society, but unacceptable in another community. The writer has to locate the text in a specific place and time in order to make it easier to interpret the text right. If the text is meant to be aberrant, the writer can begin the text with expressions like *I dreamed that* or *I imagined that*. They help the reader to accept the text as a sensible text. There are also other explanations for aberration. The context can make it justified, for example if the text is an extract from a dictionary. Also the writing situation is a satisfactory explanation, for instance if the writer is a person with psychiatric problems. Arffman & Brunell (1989:7) write that in text-linguistics pragmatic and semantic aspects are as important as the form.

### 2.4. The concept of a metatext

In many texts of our data there are clauses that do not really give any information about the actual topic. The tense and the subject

may vary within a text so that in some sentences they are different from the ones that are dominant in the text. For example, in a text called 'The Mystery of Moods' (A-level reading comprehension test, 21 September 1983) the actual topic is painkillers' effect on people. The next sentence is an example from the text.

Researchers now speculate that the stress of battle, or indeed any kind of profound stress, may encourage the body to produce large amounts of beta-endorphin to cope with unexpected crises.

Enkvist's (1975:24,115) term for parts of a text like the underlined clause of the example above is 'a metatext'. It does not increase the basic information given by the text, but it explains to the reader how the text is composed and organized. Its purpose is to describe the text in which it is included. In this example the tense of the metatext has not changed, compared to the actual text, but the subject has.

Enkvist (1975:115,116) says that metatextual elements are common especially in spoken language, so that it would be easier for the listeners to absorb the given information. As our example shows, metatext is also used in written language. It can be a whole sentence or a series of sentences, a clause, a word or a form. The concept of metatext is relative; a certain part of a text is metatextual only with respect to another part of the same text. It is often also a matter of opinion. The reader can decide herself/himself what she/he considers to be the basic parts of the text. From the point of view of a reader, in this case a student taking the test, metatextual elements make the perceiving and understanding of a text easier. However, when you define the type of a text, these elements can cause confusion, especially if there are lots of them. The text type of the metatext is sometimes different from the type of the main text, so you have to follow your definition of a metatext logically throughout the text in order to see which parts belong to the basic topic.

According to Conte (1989:277) the term metatext refers to instructions to the receiver concerning the function of a part of a text vis-à-vis the whole text. Textdeictic elements are metatextual in nature.

### 3. TEXT TYPES

Egon Werlich introduced his five text types in his book A Text Grammar of English. These types are description, narration, exposition, argumentation and instruction. According to Werlich (1983:39), a text type is an idealized norm of distinctive text structuring which serves as a matrix of rules and elements for the encoder when responding linguistically to specific aspects of his experience.

According to Werlich (1983:46) text type is a theoretical concept, and its manifestation in a natural language is called text form. This means that all the text types are divided in subgroups, because within one type there can be texts quite different from each other. While reading our data we have discovered that it is almost impossible to find a real text that purely belongs to one text type.

Although we used Egon Werlich's text type classification when we classified the texts that make up the data of this study, we also familiarized ourselves with what some other linguists have said about text types. All these different text type categorizations are based on or similar to Werlich's text types. We used these sources to clarify Werlich's text, which can be very theoretical and abstract at times. Kauppinen & Laurinen (1984) have used the same categorization as Werlich, although they have written it in Finnish about Finnish texts. Havola et al. (1995) have also written about text types in Finnish, their definitions are more particular than Kauppinen & Laurinen's definitions, except that they have not mentioned the instructive text at all. Jean-Michel Adam (1992) has divided texts into five categories which are story or narrative, description, argumentation, explication and dialogue. Basically his text types are similar to Werlich's types except that Adam has the category of a dialogue instead of an instruction. We do not discuss the dialogue here, because it was not a part of our analysis. Although some texts were partly dialogue, there was only one text that was dialogue from the beginning to the end, so we still preferred to follow Werlich's classification.



### 3.1. Descriptive text type

Werlich says (1983:47) that phenomenon-registering sentences are typical of descriptive texts: *Dozens of books were on the shelf*. This sentence type has different variants, for example there is/was-sentences of the basic pattern *There is/was* + NG (nominal group), and action-recording sentences which have a progressive verb form. The descriptive text type is divided into impressionistic description, which has a subjective point of view, and technical description, which has an objective point of view.

Kauppinen & Laurinen write in their book (1984:25) that the main function of a descriptive text is to describe a permanent situation, phenomenon, object etc. Observations are related to space and not for example to time. That is why the verbs of a descriptive text are static verbs or motion verbs that do not lead to a change. Adverbials of place are common in this text type.

According to Havola et al. (1995:5-6), writers choose the descriptive text type when they want to convey the results of their observations. A descriptive text clarifies connections between a whole and its parts. In impressionistic description the writers try to give the readers a vivid image of something that they have experienced. The object of technical description is an individual, a state of affairs or an event that is recurrent or that can be repeated.

Werlich writes (1983:48,53) that there are five different styles that can modify the descriptive text. In the impressionistic description they are the hyperbolic style reflecting the writer's excitement or surprise at the phenomena he refers to, the metaphorical style reflecting the writer's wish to choose words or expressions unfamiliar to the text-internal field of reference, the comparative style reflecting the writer's wish to choose words or expressions familiar to everyday language, and the evocative style reflecting the writer's wish to cause particular emotional reactions in specific addressees. The fifth style is the technical style of the technical description in which normed vocabulary for a particular field of reference is used.

According to Werlich (1983:49,53), a first-person singular point of view sometimes combined with the second-person singular point of view is very typical of the impressionistic description whereas the technical description has a non-personal

third person point of view. Present or past tense is used in the former, and timeless present tense in the latter.

Adam (1992:75-100) combines a descriptive sequence with enumeration. A descriptive text is a list of characteristics. The order is not important as in a narrative text. A descriptive text can be a simple descriptive proposition, or it can be a complete sequence which does not have a limit.

As to the distribution of the descriptive text type, Werlich states (1983:50,54) that it is frequent in relatively short narratives, features and reportages as impressionistic description. Technical description, on the other hand, is common in newspaper articles, scientific papers, non-fiction books, and articles in encyclopaedias.

### 3.2. Narrative text type

In Werlich's text grammar (1983:55) action-recording sentences are said to be common in narrative texts: *John went to Africa last June*. The narrative text type is divided into narrative which is narration from a subjective point of view, and report which is narration from an objective point of view.

According to Kauppinen & Laurinen (1984:25), the aspect of time is essential in a narrative text. Predicate verbs are usually verbs that lead to a change, for example *start* and *change*. Adverbs and adverbials denote time and place, especially adverbials of time are common.

Havola et al. write (1995:6-7) that the main function of the narrative text type is to give the reader the writer's impressions of an event or a series of events, to convey information or to create a vivid picture of the writer's experiences. The events of the text are described in chronological order, and there is often description of the environment and the people. A narrative text frequently includes dramatic excitement with a crucial turning point.

There are four different styles which can modify the neutral style of the narrative text. In the narrative they are comparative style, and metaphorical style that have been defined earlier. Technical style and formal style modify the neutral style of the text in the report. Formal style reflects the writer's respect for the addressee of the text, and it is used when addressing strangers, especially public audiences. (Werlich 1983:56, 60, 274.)

Werlich states (1983:57,61) that in the narrative the writer normally speaks from the first-person singular or third-person points of view, and tends to combine these person-oriented points of view with a narrowing or widening focus. In the report a non-personal third-person or a first-person plural point of view are chosen which may be used together with a personal third-person point of view. The tense of the narrative text type can be either present or past tense.

Adam (1992:46-58) gives six criteria for a narrative. First there has to be succession of events in the text. This is the temporal aspect. Secondly, there must be thematic unity. It means that in the text there is a subject that joins different parts of the text together. The third criterion is that there are transformed predicates which take the subject and the events from one situation to another. A narrative must also have a process. It is everything that happens between the initial and final situations. The fifth criterion of a narrative is its way to put things in a chronological order. The sixth criterion is that a narrative has always a final evaluation at the end. It is the moral of the story, and it can be either explicit or implicit.

According to Werlich (1983:59,64), the two variants of the narrative text type appear in different contexts. The narrative is frequent in jokes, anecdotes and various kinds of stories, for example novels and short stories. The report is the text form variant that is most frequently used in radio and television broadcasts, newspapers, briefs, and non-fiction books, especially history books and encyclopaedias.

### 3.3. Expository text type

According to Werlich (1983:71), an expository text can be analytic exposition, synthetic exposition, or a mixture of the two. Phenomenon-identifying sentences are typical of synthetic exposition: *One part of a car is the motor.* On the other hand, phenomenon-linking sentences are typical of analytic exposition: *The spider has eight legs.* Analytic variants of exposition are expository essay, definition and explication, of which the first one is exposition from a subjective point of view, and the other two are exposition from an objective point of view. Synthetic variants

of exposition are summary and minutes which both have an objective point of view. Text interpretation is a mixture of analytic and synthetic exposition, and it has an objective point of view.

Kauppinen & Laurinen say (1984:26) that the main function of an expository text is to analyze or synthesize different phenomena. Verbs are usually in present tense, and passive and impersonal forms are common. Sentences that describe or name something occur very often in an expository text.

Havola et al. write (1995:4) that an expository text explains and illuminates problems in order to make them easier to understand. Writing this kind of a text can sometimes be compared to solving problems. The most important thing in it is to explain the subject matter. The writers substantiate their claims, and sometimes also try to convince the readers by questioning the ideas that are different from their own conceptions.

Werlich explains (1983:72-282) that there are five different styles that can modify the expository text. In the expository essay they are formal style, comparative style, informal style, and illustrative style. Informal style reflects the writers' state of feeling socially at ease with their addressees, and it is used among people who know each other, but are not in confidential terms. Illustrative style reflects the writers' wish to use terms that make concepts in a text clearer and more concrete for the addressee. It is used among people who are not experts in a particular field. In the explication and the summary neutral style is modified by formal style and technical style. Formal, technical and illustrative styles are the modifying styles in the text interpretation.

Werlich states (1983:73-101) that in the expository essay the writer can choose between the first-person singular and plural, the second-person and the non-personal third-person points of view. In the explication the writer speaks from the non-personal third-person or the first-person plural point of view. Non-personal or personal third-person point of view is used in the summary, the minutes and the text interpretation. In the expository text form variants the present tense is the most common.

Adam's explication (1992:127-142) corresponds to Werlich's expository text type. According to Adam an explication consists of an initial situation, a problem or a question, an answer to the former and a conclusive situation. *Why* and *because* are words that describe this type very well. Adam also writes about justification for what someone says or does: it is particularly a form of explication.

Expository essay is common in the longer articles of quality newspapers, journals and magazines. Different kinds of definitions are typical of monolingual dictionaries among other things. Explication is frequent in papers of specialized fields of knowledge and encyclopaedic articles. Both fictional and non-fictional text interpretations are used in communication situations at all levels of elementary and advanced education. (Werlich 1983:74-103.)

### 3.4. Argumentative text type

Werlich states (1983:106) that the argumentative text type is used when communicating about the validity of relations among concepts. The writer starts from the implicit or explicit statement of a problem, and then poses the question of how a given fact (event, object, idea) should be classified by proposing relations between this fact and conflicting concepts or systems of thought. Negated simple quality-attributing sentences are often used in an argumentative text: *Mathematics is not difficult*. Also other variants of the quality-attributing sentence appear in the argumentative text. The argumentative text type has two variants: the comment which is argumentation from a subjective point of view and scientific argumentation which is argumentation from an objective point of view.

Kauppinen & Laurinen say (1984:27-28) that the main function of an argumentative text is to convey the writers' preferences. The basic structure of the text is often dual, like a dialogue. Some previously presented ideas are a starting point against which the writers express their own opinions, and this is reflected in the language of the text. Negative sentences and contrastive expressions are common in argumentative texts. Also conditional forms and degrees of comparison are used to express

contrasts. An argumentative text tries to persuade the addressee to adopt a certain kind of view, to influence the readers' attitudes and opinions towards the subject in question (Havola et al. 1995: 5).

According to Werlich (1983:108-280) there are seven different styles which can modify the neutral style of the argumentative text. In the comment they are informal, ironical, appreciatory, depreciatory and persuasive styles. Ironical style reflects the writers' disrespect or contempt for the phenomena that they refer to. Appreciatory style reflects the writers' wish to influence their addressees in favour of the phenomena that they refer to. Depreciatory style, on the other hand, reflects the writers' wish to influence their addressees against the phenomena they refer to in their texts. Persuasive style reflects the writers' wish to get the addressees' spontaneous consent to what he asserts or doubts in the text. In the scientific argumentation there are two modifying styles which are formal style, and technical style.

As to the personal points of view, Werlich says (1983:108,118) that in the comment the writers usually speak from the first-person singular point of view. In the scientific argumentation the non-personal third-person point of view or the first-person plural point of view is used. Also the first-person singular point of view can appear, but only when the writers refer to their own propositions and conclusions. Present tense is chosen both in the comment and the scientific argumentation.

Adam (1992:105-124) gives a basic scheme for an argumentation. At first there is a premise. After that comes an argument, and also a statement supporting the argument. In the end there is naturally a conclusion. Often there is also some restrictions that can cause the conclusion to be opposite of the one without those restrictions. These restrictions usually begin with a conjunction, for example *but*.

The comment is frequent especially in spoken communication, but it also appears in written communication, for example in personal statements, letters, and the columns, comments and reviews of newspapers. The scientific argumentation is most commonly used together with expository text divisions. (Werlich 1983:111,121.)

### 3.5. Instructive text type

According to Werlich (1983:121-122), the most common sentence type in the instructive text is the simple action-demanding sentence: *Don't move!* It also has variants, for example commands introduced by an emphasizing *do*. Instructions have a subjective point of view, and directions, rules, regulations and statutes are instruction from an objective point of view.

Kauppinen & Laurinen write (1984:23,24) that an instructive text directs action. The directions are aimed at the writers themselves or more often at the readers or sometimes at both. The text is directed towards future action. Imperative forms, passive forms and modal verbs are typical of this text type. Relations between cause and effect are also common.

About the style Werlich says (1983:124,128,274) that polite style, persuasive style, and appreciatory style modify the neutral style of the instructions. Polite style reflects the writers' acknowledgement of their addressees as equal participants in the communication process. In the other variants of the instructive text type the modifying styles are formal style and technical style.

In instructions the writers speak from the first-person or the second-person point of view. The former can be called sender-directed instruction, and the latter receiver-directed instruction. Directions, rules, regulations and statutes use the non-personal third-person point of view or the second-person point of view. Present tense is typical of all variants of the instructive text type. (Werlich 1983:124,128-129.)

Werlich says (1983:126-132) that subjective instruction is most frequent as distinct text divisions of comments, reports, sermons and prayers, letters, political speeches and various pieces of propaganda. It is also common in advertisements. Objective instruction is used for example in work directions, technical instructions, recommendations, prescriptions, guides, manuals, rules of games, contracts and testaments.

### 3.6. Unity and multitype texts

Virtanen writes (1992:67-71) about the heterogeneity and the homogeneity of texts. When a text consists of only one type, it is a

*unitype* text. When a text consists of a combination of two or more text types, it can be called a *multitype* text. If this rule was followed strictly, there would be only few *unitype* texts. That is why the rule can be interpreted more flexibly. In a *multitype* text there is usually a frame text which can be said to be the main text, and its type is also the main type in the whole text. So if a *multitype* text is supposed to be assigned to a specific text type, its frame text should first be identified. Within the frame of a *multitype* text there are sub-texts that can be interpreted as distinct parts.

#### 4. FACTORS THAT AFFECT READING COMPREHENSION

##### 4.1. Readability of a text

In order to find out why tests based on some texts produce better results than other texts we studied their readability on the basis of some theories and formulas. Readability studies of the first half of the 1920s had a tendency to concentrate on vocabulary aspects like difficulty, diversity and range, and frequency word lists were used to measure vocabulary difficulty (Chall 1988:6). Davison (1988:36-37) writes that two text properties have been used as the basis of readability formulas. They are average sentence length and average word complexity. For the English language these formulas were developed in the 1920s and 1930s. Using only them is problematic, because you cannot usually predict what kind of people are going to read the text. Secondly, these formulas do not define the actual sources of difficulty. When it comes to the target group of the data of this study, the situation is exceptional, because the composition of the group is known beforehand. It is quite homogeneous, most of the students are of the same age, and they live in the same culture. Davison (1988:39-44) writes again that in some cases a formula can predict a high level of difficulty for a text that is in fact quite clear, while in other cases it is not sensitive to real obstacles to comprehension. There are many features to which formulas are not sensitive, for example literary style. The guidance of formulas is not always needed when difficulty levels are assigned to texts.



According to Fry (1988:77), it is possible to cheat readability formulas by artificially chopping sentences in half or selecting any short words to replace long words. Although readability formula scores can be lowered, it does not always mean that the true readability changes. It can even change in the wrong direction. When the readability is really increased, it can be demonstrated by higher scores on comprehension questions, or even by subjective judgement of the reader.

Fry (1988:78-88) has listed different factors that can increase the readability of a text. He has not forgotten the principles of the original readability formulas, but in addition to them he has included many other important factors in his list:

1) Vocabulary: One way to increase the readability of a text is to use simple vocabulary, so called high frequency words. Words of Latin or Greek origin should not be chosen if there are good common words. For example, *proceed* often means *go*. Words that have prefixes like *pre-*, *dis-* or *multi-* can often be replaced with easier words. It should also be taken into account that some words, like *run* for example, have different meanings in different contexts.

2) Sentences: In general, authors should keep their sentences short. However, in some cases longer sentences communicate better. That is one reason why readability formulas have been criticized. A sentence *Farmer Brown didn't go to town because the roads were icy* is clearer than two separate sentences *Farmer Brown didn't go to town. The roads were icy*. In the latter example it may be difficult to notice the connection between the two things, whereas in the former example the word *because* tells the reader immediately that bad weather was the reason why farmer Brown did not go to town.

It also reduces the readability of a text, if the subject and verb-object are split with distance. This is called Kernel Distance Theory. If a subordinate clause is embedded in the middle of the kernel, it causes poor readability. The same happens, if there is a subordinate clause in front of the kernel. Sentences *Federal funding, although lately it has leveled off, has increased considerably*; *Although lately it has leveled off, federal funding has increased considerably*; and *Federal funding has increased*

*considerably, although lately it has leveled off* are good examples of that. The third exemplary sentence is definitely the clearest.

A third factor concerning sentences is that active voice causes better readability than passive voice. Also punctuation is helpful to the reader unless commas are used to make very long sentences.

3) Paragraphs: If a paragraph is very long, there are often too many ideas in it. That is why paragraphs should be short on the average.

4) Organization: Statement-Example-Restatement sequences are typical of expository writing that has high level of readability. These sequences include repetition, giving concrete examples, and restating the principles in other ways. Secondly, subheadings help to understand a text, because they inform the readers what organizational pattern the writer is using. Thirdly, if the author wants to write a clearly organized text, he usually uses many signal words, such as *first, next, in conclusion* indicating sequence and rank order; *however, but, on the other hand* indicating that a reverse idea is coming; or *maybe, if, allegedly* indicating author's uncertainty.

5) Personal words: Using personal pronouns makes a text highly communicative. If the writer uses the pronouns *I* and *you*, he becomes more concrete to the reader, and the text becomes more personal. However, it is not good to use so many personal pronouns that they draw attention away from the actual subject.

6) Imageability: A word, phrase or passage has high imageability when a reader can easily visualize it. Words like *dog* and *mother* are high imageable words, while *philosophy* and *of* are low imageable words. Writers should find vivid examples for their texts. This quality can also be improved by adding for example pictures or diagrams, but they do not belong to the data of this study, because the purpose is to understand the text.

7) Referents: Referents are pronouns or phrases that refer to something earlier mentioned, usually in the preceding sentence. They save time and space, and increase readability if they are correctly used. Sometimes a referent can refer to more than one thing. In that case using them can lower readability. The same happens if a referent is greatly delayed.

8) Motivation and subject matter: Readers are always individuals with their personal motivation to read a particular text. That cannot be judged by any formulas. In order to increase readability writers should find interesting topics, and write directly to someone. Some people have more background knowledge about the topic than the others, and that affects the motivation which affects the readability.

Fry (1988:84,88) also writes about the cohesion of a text, but it is treated at length in chapter 2.2. of the present study. Then he mentions that the best way to test readability is to make a try out. However, it is not relevant when it comes to the texts of the reading comprehension tests of the Matriculation Examination, at least not before the test has been held.

According to Puranen (1981:11), a reader understands a text better if people and phenomena are familiar, because he can then identify with the text. Especially for a person who is not used to reading, identifying is important. It makes the text interesting, which encourages the reader to go to a lot of trouble when trying to understand what is said in the text.

#### **4.2. Other factors affecting the textual understanding**

Understanding is not dependent only on text types, readability criteria mentioned above or other text internal factors. This thesis is limited to these factors, but other factors could be a theme for further studies. It is important to remember their existence in interpreting and reflecting on the results of this study.

Schlotthaus (1988:74-87) writes about five different factors affecting understanding. Reader's own strategies and modes of understanding have a role in textual understanding. It means that even if the writer tries to make a text which is as nonsensical as possible, the reader has a tendency to try to attribute a sense to that text in his own mind. However nonsensical a text may seem, it is natural for a human being to find an explanation to everything. Schlotthaus writes about an experiment in which some German students had been asked to read a short text with sentences that were grammatically correct but that did not have any sense. The text had been thought to be for example a secret code or Ionesco's text from the early fifties.

The second factor that Schlotthaus (1988:75-76) lists is the reading situation. Written texts usually leave more room for interpretation than oral texts, although usually writers have a certain function or usage in mind when they produce texts. However, the writer and the reader of a text do not usually meet each other. There is also a difference between pragmatic and literary texts. The latter constitute more open reading situations than the former. The data of this study are in a special position. Most of the texts have originally had rather open reading situations, but when they have been chosen as parts of the Matriculation Examination, their reading situation has been specified narrowly. All the readers are taking a test and their main objective is to understand the content of the text in order to be able to answer the questions correctly.

Schlotthaus also writes (1988:76-78) about reading strategies as being the third factor affecting the understanding. They are reader's specific acts that he uses to define his intentional usage of a text. There are different reading strategies, for example informative, personal and critical strategies. They are all used in different reading situations. For example, if the reader is reading a text in order to find out something that he did not yet know, he uses the informative strategy.

The fourth factor in Schlotthaus' (1988:78-83) theory is the reader's repertoire of every day theories or of generalized experience. The cultural background knowledge of the reader affects very much the comprehension and the interpretation. This means that if for example an American and a Russian person read the same text, they may interpret the text in a completely different way. Also the sex or the education can be a distinctive quality. All the people have built up generalized concepts during their lives, and all their experiences have somehow affected these concepts.

The last factor about which Schlotthaus (1988:83-84) writes is age, which can also be thought to be a same kind of quality as the nationality or the sex. Education is even dependent on the age to some extent at least. Age and the age-conditioned textual experience generally increase the capability of people to read and understand texts. The younger the children are the more subjectively they read texts. Hoppe-Graff and Schell (1988:89) write that adults have their own relatively precise ideas and

conceptions of children's abilities to comprehend literary texts. These conceptions affect parents' choices when they read texts to their children.

According to Moffett (1968:15-16) comprehending and composing language are not dependent on written symbols. There is not necessarily connection between reading and the comprehension of words, because reading, decoding of letters involve only perceptual and motor skills, whereas real comprehension involves also thought and emotion. A person can read a text correctly without understanding what the words mean. The skill of comprehending evolve as children mature.

## 5. THE CURRICULA OF FOREIGN LANGUAGES

### 5.1. General tendencies in teaching English

Language teaching is based on a national curriculum in the Finnish school system, also in upper secondary school (=lukio). Important guidelines concerning language teaching had been issued in 1941, but after three decades they were found to be outdated (Nykykielet 1971:3). The first more widely known curriculum was called "Nykykielet", which was published in 1971. It applied to both secondary school/comprehensive school and upper secondary school. In 1981, The National Board of Education (formerly kouluhallitus, now opetushallitus) published a curriculum called "Lukion kurssimuotoinen oppimäärä ja oppimääräsuunnitelma" concerning English language in particular. The next curriculum for the whole upper secondary school was "Lukion opetussuunnitelman perusteet 1985", and the latest principles for the curriculum were published in 1994. It is conspicuous that during the last 15 years the curriculum has been revised frequently, at least compared to the earlier decades.

According to the first curriculum (1971:18,19,26), in the upper secondary classes there were four lessons of English per week in every grade. Extensive reading was considered one of the most important methods especially in the two last grades. Reading comprehension was mainly to be tested with multiple choice questions, but also discussion, description and summary were

possible. The tests were supposed to consist of exercises that controlled only the understanding of the subject matter. Extensive reading was considered suitable for upper grades, because it requires the readers to master the structures and the vocabulary of the language relatively well. The readers were not supposed to translate every detail of the text, but it was important that they understood its main idea. Intensive reading was used in lower grades. It requires the readers to understand and absorb the contents and the form of the text precisely.

As an introduction to the curriculum of 1981 also a separate booklet concerning all language teaching was published. It was named "Vieraiden kielten opetus kurssimuotoisessa lukiossa". It says (1982:48,13) that intensive and extensive reading should be used side by side so that at the end of the course the emphasis is on extensive reading. The general objectives of language teaching in upper secondary school were divided into seven groups. It was stated that the pupils should be able to communicate both orally and literally in general situations. They should have sufficient skills related to pronunciation, vocabulary and structures. It was also important that they were able to understand different kinds of texts, although they did not need to master special vocabularies of different lines of work. In addition to linguistic skills they were expected to have knowledge about the circumstances and culture of the countries where the language studied is spoken. They should also be capable of conveying information about their own country and culture to other people. Beside these objectives that refer more or less to linguistic skills there were two general goals: the school wanted to give the pupils skills of studying which help them to improve their knowledge in the language also after school. Finally, language teaching, like all teaching in upper secondary school, tried to develop the students' personality.

In the curriculum of 1981 there were separate curricula for A-, B-, C- and D-languages, of which we are interested in A- and B-languages, because we use the reading comprehension tests of those two levels in this study. According to the A-English curriculum (1981:12), all the four basic language skills - listening comprehension, speaking, reading comprehension and writing - were supposed to be practised during every course. Practising reading comprehension increased all the time in the upper

secondary school so that at the end this skill was practised the most. It was especially emphasized in A-language teaching because it was considered a prerequisite for further studies in institutions of higher education and for being able to follow the development of one's profession.

The curriculum of 1981 (1981:54) stated that the general objective of a B-language was to give the pupils a positive attitude towards the language so that they would want to maintain their skills and to use the language in different communication situations. Also in B-language the practicing of reading comprehension was supposed to increase all the time towards the last course of the upper secondary school. At the end it had a little more emphasis than listening comprehension and writing.

According to the principles of the curriculum 1985 (1985:61), the primary goal of upper secondary school A-English was to give the pupils necessary communicative skills so that they would understand language and they would be understood in normal situations. The practicing of listening comprehension, speaking, reading comprehension and writing is exactly like it was defined in the curriculum of 1981. Reading comprehension was practised increasingly throughout the upper secondary school.

In the principles of the curriculum 1985 (1985:83) the objectives concerning B-level English were word for word the same as in the previous curriculum. Again, the time used for the practising of reading comprehension was to increase towards the last course.

In 1994 The National Board of Education (opetushallitus) published new principles for the curriculum. The schools have now more responsibility and choice than they used to have. The guidelines are more general than the previous ones. There are no separate curricula for different languages, only for different levels. According to "Lukion opetussuunnitelman perusteet 1994" (1994:60,61) the objectives of the A1- and A2-level languages - beginning on the lower level of the comprehensive school - are mainly the same as the objectives of A-English were before. One reform is that the pupils should now also learn to make a summary both orally and literally. The goals concerning the B1- and B2-level languages - beginning on the upper level of the comprehensive school - are almost similar to the ones concerning

the A1- and A2-languages, only adverbs like "well" and "actively" describing the level of the required skills of the pupils are left out. Furthermore, writing summary is not mentioned in B-level languages, but the pupils should be able to write a short narrative, descriptive, argumentative or explanatory text using aids if necessary.

## 5.2. The Themes of the English courses

The first course-based curriculum for the upper secondary school was published in 1981. The curriculum was divided into shorter courses of 36-38 lessons. It gave titles for all the courses, and under the titles it specified possible themes for the courses, too. In this study we intend to compare the subjects of the texts of the reading comprehension tests to the themes and subjects of the courses. It seems logical that besides the text type also the subject matter affects the result of a test.

It says in the curriculum of 1981 (1981:18,55) that when themes were chosen for the courses, developing the personality of pupils should be taken into consideration, as well as the demands of culture and society. However, it was also important that the chosen subjects would interest pupils and keep them motivated. Especially in A-language the themes were to help pupils to learn international co-operation and mutual understanding.

According to the curriculum of 1981 (1981:21-39), there were eight obligatory courses in A-level English. The title of the first course was *Man and his immediate surroundings*. Important themes were for example home, family, friends, school and relationships, which were treated mainly from young people's point of view. The second course was called *Man, his hobbies and the services that he uses*. Everyday language was emphasized now, and pupils should learn how to both offer and use services. Themes could be hobbies, clubs and societies, sports and usual situations where services are used. The third course dealt with *Man and his work*. The subject matter was wide, and it was approached practically with concrete examples. Besides working, also studying was treated during this course. Possible themes were different occupations, applying for a job or a place of study, trade unions, unemployment and the importance of work. The fourth course



was called *Man and society*. Themes were viewed from the standpoint of both an individual and a society. Examples of important subjects are different ways of living, health and health care, and characteristics of political systems in Great Britain and the United States of America. The title of the fifth course was *Man, knowledge and technology*. One point of view was the development of technology in the light of one trade as an illustration. Themes might be for instance achievements of different trades, the development of traffic, space conquest, media, current problems and advertising. The sixth course discussed *Man, education and culture*. The aesthetic domain of life including theatre, arts and different forms of literature was considered important. Also the school systems of English speaking countries could be studied. *Man and nature* was the title of the seventh course. The thematic point of view was man's relationship with nature. The subjects discussed could be natural resources, conservation of nature, planning of the environments and the population problem of the world. The last course was called *Man and the peoples of the world*. It sought to promote the formation of student's conception of the world. Possible themes were the position of Finland in the international field, political and military organizations, economic life, international co-operation, human dignity and racial problems.

As for B-level English, the course titles given in the curriculum of 1981 (1981:67-80) were mainly the same as in A-level English. However, in the B-language there were only seven obligatory courses, and it was the course called *Man and the peoples of the world* that had been left out. Some demanding subjects under the main titles of the courses, like space conquest, had been changed so that in B-level English they were additional subjects.

The principles of the curriculum of 1985 (1985:65-92) gave themes for the courses again. The titles of the courses and therefore the subjects discussed during them were exactly the same as they were in the former curriculum, both in the A-level and the B-level English.

In the most recent principles of the curriculum (1994:62-64) there are freer instructions for the courses than in the two former curricula. It gives common topics for all the foreign languages leaving more choice and responsibility with the teacher than

before. First it enumerates a long list of possible themes that can be treated throughout the upper secondary school. There are no new themes compared to the former curricula. For the A1- and A2-level languages there are titles for six courses which are *Young person and his world*, *Communication and leisure time*, *Studying and working*, *Society and the surrounding world*, *Science, economy and technology*, and *Culture*. For the B1-level language there are five courses named, which are the same as above except that the third and the fourth course have been combined. However, it is also stated that the students' hobbies and current issues are good topics for the courses of all the levels.

We looked at one upper secondary school English book series, *Passwords 1-8* (1990), and observed that most of the texts were of expository type. Especially the courses from 4-8 have such themes in all the curricula that expository texts are natural for them.

## 6. LANGUAGE TESTS IN THE MATRICULATION EXAMINATION

As long as the matriculation examination has existed, there has been a critical discussion about it. From time to time people have demanded the abolition of the exam but mostly they have wanted to develop and improve it. (Kärkkäinen & Takala 1988:159.)

The purpose of the matriculation examination is to find out if the students have reached adequate maturity and the required level of learning. The tests have to be related to the syllabi of the schools. All the modern curricula emphasize the practice of communication skills. The curricula of different languages are not totally similar, for example in the A-level English reading comprehension is of special importance. (Kärkkäinen & Takala 1988:162-163.)

The form of the language tests in the matriculation examination has changed many times. In the first language tests in the middle of the 19th century students had to translate texts from the mother tongue into the target language with the help of dictionaries. In the 1920s students were required to translate from the target language and the other way around without dictionaries. This kind of translation test remained as the only test type until 1965 when a new type of test was introduced as an experiment. The students were now permitted to choose between the old and the new test. The new test had three parts: reading

comprehension, essay and translation from the mother tongue into the target language. (Kärkkäinen & Takala 1988:160.)

According to Kärkkäinen and Takala (1988:61) another type of test was accepted in 1972 as an option to the previous test type, and it was put to use in 1974. This test consisted of a listening comprehension test, a reading comprehension test and an essay. In 1979 a separate structure test was added to the written part.

In 1987 the language tests in the matriculation examination were again reformed. In the written part different aspects of language skills could be integrated. The Matriculation Examination Board also stated that it would be important to study and develop realistic ways to test oral language skills. (Kärkkäinen & Takala 1988:171-174.)

Nowadays the schools do not know beforehand specifically what the test will be like. Only the range of test types is known. In autumn 1995 the Matriculation Examination Board sent new instructions concerning language tests to schools. These instructions were valid for the first time in spring 1996. According to these instructions (Ylioppilastutkintolautakunnan ohje rehtoreille ja kieltenopettajille 20.10.1995:3) the tests in the foreign languages, some less studied languages excluded, consist of listening and text comprehension and a part that measures the abilities to use written language. In the listening comprehension test possible question types are multiple-choice questions in the mother tongue or in the target language and open questions in the mother tongue or in the target language. The multiple-choice questions can either have the traditional four alternatives (A, B, C, D) of which the student has to pick the right one, or they can be true/false questions (Ylioppilastutkintolautakunnan ohje rehtoreille ja kieltenopettajille 20.10.1995:4.)

In the written part, which measures text comprehension and production, the following types of tasks are possible: multiple-choice questions in the target language or mother tongue, open questions in the target language or mother tongue, a multiple-choice cloze test, a productive cloze test, a summary, translation or explaining, and composition or short writing tasks with specific instructions. When the multiple-choice questions are used in text comprehension, the student picks the right or the best alternative out of four possibilities that can be either in the target language or

in the mother tongue. The open questions measure text comprehension, the ones in the target language text production as well. The multiple-choice cloze test measures both text comprehension and knowledge of grammar and vocabulary. The student picks the best alternative out of three or four. The productive cloze has one or several short texts with gaps that the student has to fill in with the help of the text itself or instructions given. The summary is written either in the target language or the mother tongue. When translation is used in the test, there can be underlined parts in the text that the student has to translate into the mother tongue or that have to be explained in the target language. One alternative is also that the students have to translate longer parts of a text into the mother tongue. The composition measures the student's ability to produce a coherent text on a given subject independently. In addition to or instead of the title the task can include more specific instructions, like comments, questions, the beginning of a plot, or key words. (Ylioppilastutkintolautakunnan ohje rehtoreille ja kieltenopettajille 20.10.1995:9-11.)

The language tests in the matriculation examination are already quite versatile, but as time goes on and the language skills of students continue to improve, the tests will undoubtedly be reformed and developed further. One interesting idea that has been talked about is adding an oral test to the language part of the matriculation examination.

## 7. MATERIAL AND METHODS

The data of this study includes the reading comprehension tests of both A- and B-level English between the spring of 1980 and the spring of 1995. However, in 1980 and 1981 there were not yet separate tests for A- and B-level languages. Those tests have been regarded as A-level tests in this study, and B-level material starts from the spring of 1982. The two oldest tests (spring and autumn 1980) of the data consist of only one text each, but later there have been two or three separate texts in each test except both A- and B-level spring tests 1983.

In the data there were 73 different A-level texts, 37 spring texts and only 36 autumn texts. Because the Matriculation

Examination Board did not have the itemized results for all the texts, the final data was 37 spring texts and 28 autumn texts, altogether 65 texts. We analyzed the types of all the texts in order to find out the real proportion of each text type among the texts of the data, but that was all we could do without the results. The analysis is treated at length in chapter 8.

Among the B-level tests there were altogether 68 different texts, 35 of them are spring texts and 33 are autumn texts. However, the final data consisted of only 62 texts, because the itemized results of six autumn texts were missing at the Matriculation Examination Board.

First both of us analyzed all the texts in order to determine the text types. Before starting our actual analysis we consulted a researcher and a specialist of this field. We chose a few texts and together we discussed at length how to establish the text type. Nevertheless, the analysis seemed to be very difficult in the beginning, because the text types are rarely clear in natural texts. We decided to solve this problem so that we both read first all the texts alone. Then we compared our classifications with each other and found out that we had come to different conclusions with some texts. We read together all those texts and also the texts with which at least one of us had had any problems, and discussed the factors that make the texts of certain types. We did all this in order to increase the reliability of the analysis. There were also some problems with the other part of the study, analyzing the readability. We had certain factors whose share in a text, according to the theory, affect the understanding of the text. With some of the factors there was the possibility of interpretation in searching for them from the texts. These difficulties are explained more precisely later in this chapter with the methods of analyzing all the factors.

In the office of the Matriculation Examination Board in Helsinki we counted the nation-wide percentages of right answers for all the texts separately. Then we counted the average percentages for all the text type groups and compared them with each other. We treated the A-level and the B-level tests as two different groups. We were interested in the student performance concerning each text type. We wanted to know whether certain

text types produced better results than other text types in both groups.

There were altogether six text type groups because we treated the miscellaneous group as one, the sixth group, although the texts were combinations of very different text types. Otherwise we should have created almost as many new groups as there were miscellaneous texts. We wanted to see how the variation of text types within one text affects the comprehension notwithstanding the actual types in these texts. In reality there were finally only five different groups to be analyzed, because in this data there were not any purely descriptive texts.

We checked which five texts had the best results and which five had the weakest results. We realized that all the texts that had the best results were texts from spring term examinations, and the texts with the weakest results were texts from autumn term examinations, which now seems quite natural considering the difference in the composition of test takers in the spring and the autumn. So we decided to handle spring term tests and autumn term tests separately in both A- and B-level languages ending up having four different groups within which we could compare the easiest texts with the most difficult texts.

We compared the texts with the best results and the texts with the weakest results to see if the factors that Fry has presented have affected readability in the reading comprehension tests of the matriculation examination. Fry's theory is introduced in chapter 4 of the present study. In addition to Fry's theory we were also interested in the effect of cohesion and coherence on reading comprehension.

We looked at the text types first, because the effect of the text types on reading comprehension was originally the starting point of this study. However, the distribution of these five text types among the tests was so irregular that other factors had to be looked at, too. We compared also the vocabularies of the texts. We checked if there were a lot of compound words, and if there were words of special fields like medicine or meteorology, or loan words in their original form. We counted the loan words and the words of special fields together, first of all because many words belonged to both of these groups. Secondly, two different groups would have been very small, even the combined group is small.

With these words there was one more problem to be solved. Almost all the words of the English language could be said to be loan words if you go centuries back in the history. So we had to decide where to draw the line. As loan words we counted only the words that still have for example the foreign endings in singular and plural, or other foreign forms. And the words of special field are the words that are not used in other connections than that special domain. To increase the reliability of this analysis we both counted the words first alone and then compared our individual results as we did with the text types.

We also searched for words with prefixes in the texts. To see if a word can be said to be a common or usual word, we consulted a dictionary of frequencies. For this consultation we had to find a sensible way to pick up a certain number of words from each text. So we asked two persons to find difficult words from every text. We gave the A-level texts to one of them and the B-level texts to the other, so each of them had to read 20 texts altogether. Our testees had to choose altogether five words that were difficult for them from the five best and the five weakest texts. From some texts it was not easy to find the words, but on the other hand there were also texts that included plenty of difficult words. We were aware that this is not the most reliable way to measure the level of difficulty and frequency of some words, but still we wanted to use this approach in the study, too, because this gives one point of view and can be an exploratory method. The corpus of the dictionary of frequencies that we consulted was 5 088 721 words. One of the testees passed the matriculation examination in 1995 with the mark cum laude approbatur in A-level English, and the other is still in the upper secondary school, but is most likely to get laudatur in A-level English in the matriculation examination. Every now and then in the texts there were also difficult words that were given in Finnish or explained with the help of some other English words. We also could have asked the testees to find all the difficult words from the texts and then compare their total shares with each other, but we decided that it would be clearer for the testees to find a certain number of words from each text so that they did not have to decide whether all the borderline words are difficult or not. On the other hand we ourselves were interested

in using the dictionary of frequencies to see if the difficult words are the same as the least frequent words.

We also looked at the sentence structures in the texts. We were interested in the number of words in sentences. We were also interested in the use of active and passive verb forms, and in the arrangement of kernels, if they were unsplit, or split by subordinate clauses for example. Then we checked the usage of some punctuation marks, namely colon, semi-colon and dash. With these punctuation marks it is easy to make sentences very long, because a great number of clauses can be put within one sentence. That may also hinder the readability of a text.

To see if the length of a text has anything to do with the number of the right answers we counted the words of the texts of the data. At the same time we counted how many words there are on an average in a sentence and in a paragraph. However, in the data of this study the paragraphs are not very significant, because the texts are short on the whole. In spite of that we counted the paragraph lengths, because we wanted to treat all the aspects of Fry's theory.

We examined also whether the texts were so well organized that they could be easily read. That is why we counted the signal words of the texts and compared their percentages with each other expecting that in the texts with the best results there would be more signal words than in the texts with the weakest results. Usually signal words appear only in expository and argumentative texts. However, we have treated signal words like all the other factors in Fry's theory. Then we checked if the texts had many Statement-Example-Restatement sequences, i.e. a lot of actual repetition, repetition in other words or concrete examples of the subject. We decided not to count these sequences, because it would have been almost impossible compare different texts in a reliable way. However, we wanted to give some examples of this kind of sequences.

Personal words of the texts were counted, too. Beside the actual *I* and *you*, we also counted the words derived from these words, namely *me*, *my*, *mine*, *myself*, *your*, *yours* and *yourself*. However, in most of the texts there were not any personal words at all, and often in the texts where they are used, there are plenty of them. So it would not have been reasonable to count average



numbers of personal words. That is why we only counted how many texts there were in each group that had personal words. We had some problems with the word *we*. It seemed to be comparable to the word *I*, just like the singular *you* is comparable to the plural *you*. However, Fry did not say anything about the word *we*, so we decided not to count it in this group. It can be regarded as belonging to reference items.

As to the imageability of the texts we did not count the exact numbers or percentages of any words, because it is almost impossible to draw an exact line between the imageable and non-imageable words. There may also be different degrees in the imageabilities of different words, and for different people the same word can be highly imageable or not imageable at all. For example the word *prom*, which occurs in the texts every now and then, is probably very imageable to every American reader, but much less imageable to Finnish readers, who definitely are the target group of these texts as far as this study is concerned. So we decided to check the general imageability of the texts as whole and count how many imageable texts there are in the groups of the best and the weakest texts.

We counted all the reference items of the texts. To see if the words are often delayed we counted how many per cent of the reference items are in the same sentences with the things to which they refer. We counted mainly the pronouns, or other one-word reference items, so that they were comparable with the total number of words.

Because the motivation of a reader to read a particular text is always very personal, we did not take it in this study. As indicated in 4.1., it cannot be judged by any formulas.

We wanted to study the cohesion of the texts. Halliday and Hasan's theory is explained earlier in this study. According to it cohesion consists of four different aspects. Three of these aspects are so close to three of Fry's criteria of readability already mentioned here, so that we did not study them here: reference is the same in both theories, except that *I* and *you* are counted as reference items in Halliday and Hasan's theory, whereas in Fry's theory they are in a separate category, personal words; lexical cohesion is like part of the Statement-Example-Restatement sequences; conjunctions are mainly the same as the signal words

in the organization of a text. Only the substitution/ellipsis was not dealt with in the theory of cohesion, so we studied it separately.

## **8. COMPARING STUDENT PERFORMANCE ON DIFFERENT TEXT TYPES**

### **8.1. The results related to the A-level texts**

Most of the A-level texts were expository texts. There were altogether 41 texts of that type. It means that 56.2% of the texts were expository. Sixteen texts (21.9%) were miscellaneous, thirteen (17.8%) argumentative, two (2.7%) narrative and one (1.4%) was instructive. In this data there were not any descriptive texts apart from some sections in the miscellaneous texts. According to Sauli Takala it is almost impossible to use certain text types in the reading comprehension texts of the matriculation examination. It is for example very difficult to come up with suitable questions and alternatives for the test if the text is descriptive. The same is partly true when it comes to the narrative text type. The questions that can be made on the basis of the text tend to be too easy. This is one explanation for the great number of expository and argumentative texts in our data. (Sauli Takala, personal communication, March 1997.)

The relative proportion of each text type was quite alike in both the spring texts and the autumn texts. Expository texts formed clearly the biggest groups, and miscellaneous texts were the second biggest groups, although among the spring texts the number of miscellaneous texts was the same as the number of argumentative texts. Among the autumn texts the share of argumentative texts was somewhat smaller, but it was clearly the third biggest group. The only instructive text formed the fourth and the smallest group of the spring texts, because the two narrative texts were both autumn texts forming the smallest group among them. If only the texts for which statistical data are available are counted, there were altogether 37 (56.9%) expository, 13 (20.0%) miscellaneous, 12 (18.5%) argumentative, two (3.1%) narrative and one (1.5%) instructive text. The percentages did not change very much even if the texts lacking difficulty estimates were left out. Table 1 shows the text types that the A-level texts represent.

Table 1. The A-level text types

time of the test	narrat.	exposit.	argum.	instruct.	misc.
spring -80 I		x			
autumn -80 I			x		
spring -81 I		x			
spring -81 II					x
autumn -81 I		x			
autumn -81 II					x
spring -82 I		x			
spring -82 II			x		
autumn -82 I		x			
autumn -82 II			x		
spring -83 I					x
spring -83 II		x			
autumn -83 I		x			
autumn -83 II			x		
spring -84 I				x	
spring -84 II		x			
autumn -84 I		x			
autumn -84 II		x			
autumn -84 III					x
spring -85 I		x			
spring -85 II		x			
spring -85 III		x			
autumn -85 I			x		
autumn -85 II		x			
autumn -85 III		x			
spring -86 I			x		
spring -86 II			x		
spring -86 III		x			
autumn -86 I		x			
autumn -86 II			x		
autumn -86 III		x			
spring -87 I		x			
spring -87 II		x			
spring -87 III					x
autumn -87 I					x
autumn -87 II		x			
autumn -87 III					x
spring -88 I		x			
spring -88 II		x			
autumn -88 I		x			
autumn -88 II	x				
autumn -88 III	x				
spring -89 I					x
spring -89 II			x		
spring -89 III					x
autumn -89 I					x
autumn -89 II		x			
autumn -89 III					x
spring -90 I		x			
spring -90 II		x			
autumn -90 I					x
autumn -90 II		x			
spring -91 I		x			
spring -91 II		x			
autumn -91 I		x			
autumn -91 II					x
spring -92 I			x		
spring -92 II		x			
autumn -92 I		x			
autumn -92 II		x			
spring -93 Ia		x			
spring -93 Ib		x			
autumn -93 Ia					x
autumn -93 Ib			x		
spring -94 Ia		x			
spring -94 Ib					x
spring -94 II		x			
autumn -94 Ia			x		
autumn -94 Ib					x
autumn -94 II		x			
spring -95 Ia		x			
spring -95 Ib		x			
spring -95 II			x		

Although the text types were so irregularly divided, we wanted to follow the original plan to compare the results of texts with different types. The only instructive text had the highest percentage of right answers if compared with the average percentages of all the other four existing groups. If it was compared with all the other texts as one of the 65 texts, its percentage of right answers was clearly bigger than the average percentage of all the A-level texts. The difference was more than five percentage points, because 75.3% of the answers of the instructive text were correct, whereas the average percentage of all the texts was only 70.0%. These figures suggest that an instructive text per se is not difficult to understand, as this instructive text was not difficult for A-level students.

Expository texts had the second highest average percentage of right answers (henceforth often referred to as p-value), 71.8%. In the easiest expository text the p-value was 82.2%, which was the easiest A-level text. The lowest p-value among the expository texts was 56.6%, so the dispersion was quite big, more than 25 percentage points. The third easiest group among the A-level texts of this study was the miscellaneous texts. Their percentage of right answers was about three percentage points lower than the figure of the expository texts, 68.7%. The p-values varied between 51.1% and 81.1%. It means that the second easiest and the second most difficult of the A-level texts were miscellaneous. So there were both easy and difficult texts among miscellaneous texts. The same conclusion can also be drawn from the range which is a little more than 30 percentage points. This is natural for this group, because it is both the third easiest and the third most difficult group.

The second lowest p-value was the mean of the argumentative texts, even though there was not great difference between it and the third lowest figure mentioned above: 67.3% of the answers were correct among the argumentative texts. The dispersion was very high, more than 33 percentage points. The p-values of individual texts varied from 45.5% to 78.9%. The former was the lowest p-value of all the texts, it was the only A-level text in which less than half of the answers were wrong.

Narrative texts were the most difficult for A-level students. There were only two narrative texts, which was clearly less than

the frequencies in the three bigger groups. This has to be kept in mind, but this being the situation it must be accepted. The two p-values of the narrative texts were as low as 54.4% and 65.0%. The range was about ten percentage points and the average was only 59.7%, which was clearly smaller than the second lowest average. Table 2 shows the percentages of right answers in all the A-level texts.

Table 2. The proportions of right answers in each A-level text

time of the test	text I or Ia	text II or Ib	text III or II
spring 1980	61.41%		
autumn 1980	59.18%		
spring 1981	74.66%	72.74%	
autumn 1981	-	-	
spring 1982	79.80%	78.30%	
autumn 1982	-	-	
spring 1983	74.71%	79.89%	
autumn 1983	70.34%	45.51%	
spring 1984	75.32%	74.00%	
autumn 1984	70.82%	61.49%	65.94%
spring 1985	66.47%	67.58%	71.31%
autumn 1985	77.28%	67.94%	56.61%
spring 1986	68.53%	62.17%	76.35%
autumn 1986	67.48%	58.67%	60.13%
spring 1987	80.70%	78.89%	73.20%
autumn 1987	-	-	-
spring 1988	80.62%	75.43%	
autumn 1988	76.99%	64.98%	54.35%
spring 1989	77.39%	65.85%	72.77%
autumn 1989	54.04%	62.31%	51.06%
spring 1990	65.02%	78.91%	
autumn 1990	65.77%	59.80%	
spring 1991	76.82%	68.62%	
autumn 1991	72.08%	71.85%	
spring 1992	78.57%	80.17%	
autumn 1992	68.13%	74.30%	
spring 1993	76.86%	65.44%	
autumn 1993	67.04%	64.72%	
spring 1994	80.31%	81.11%	74.40%
autumn 1994	69.31%	63.34%	-
spring 1995	82.77%	73.75%	78.93%

The range of all the A-level results is as much as 37.26 percentage points. The lowest A-level p-value is only 45.51%, which means that in that test less than half of the answers have been right on an average. The highest p-value is 82.77%. In that test the majority of answers have been correct.

## 8.2. The results related to the B-level texts

The clear majority of the B-level texts were expository, exactly like among the A-level texts. Forty-five texts belonged to this group, which is 66.2% of the B-level data. There were also fourteen miscellaneous texts (20.6%), four argumentative (5.9%), four narrative (5.9%) and one instructive (1.5%) texts. There were not any purely descriptive texts, only some parts in the miscellaneous texts were descriptive. The relative distribution of different text types was very much alike in the spring and in the autumn texts. The only instructive text was one of the spring texts. The figures above cover all the texts. If the texts lacking statistical data are left out, there were 41 expository (66.1%), thirteen miscellaneous (21.0%), four argumentative (6.5%), three narrative (4.8%) and one instructive (1.6%) texts. So the relative proportion of all the types remains almost the same, whether the texts without statistical data are counted or not. Table 3 on page 46 shows which text types all the B-level texts represent.

Narrative texts had the highest average percentage of right answers, 76.0%. This is an interesting outcome, because among the A-level texts narrative texts had the lowest p-value. The highest p-value was 88.3% and the lowest one was 69.1%, so the range was almost 20 percentage points. Miscellaneous texts had the lowest p-value, which was about ten percentage points lower than the corresponding figure for the narrative texts. The p-value of the miscellaneous texts was 66.8%. In the text with the best results the share of correct answers was 80.1%, whereas the p-value of the most difficult miscellaneous text was only 51.4%. The range was nearly 30 percentage points, which was clearly more than among the narrative texts. When the highest and the lowest p-values were compared in these two groups, it could be seen that both these extreme figures were clearly bigger in the narrative texts than in the miscellaneous texts. These figures as well as the

Table 3. The B-level text types

time of the test	narrat.	exposit.	argum.	instruct.	misc.
spring -82 I		x			
spring -82 II					x
spring -82 III		x			
autumn -82 I		x			
autumn -82 II	x				
spring -83 I		x			
autumn -83 I		x			
autumn -83 II	x				
spring -84 I				x	
spring -84 II		x			
spring -84 III		x			
autumn -84 I					x
autumn -84 II		x			
autumn -84 III		x			
spring -85 I		x			
spring -85 II		x			
spring -85 III		x			
autumn -85 I			x		
autumn -85 II		x			
autumn -85 III			x		
spring -86 I					x
spring -86 II		x			
spring -86 III		x			
autumn -86 I		x			
autumn -86 II					x
autumn -86 III		x			
spring -87 I					x
spring -87 II					x
spring -87 III			x		
autumn -87 I					x
autumn -87 II		x			
autumn -87 III		x			
spring -88 I		x			
spring -88 II		x			
autumn -88 I		x			
autumn -88 II		x			
autumn -88 III		x			
spring -89 I					x
spring -89 II	x				
spring -89 III		x			
autumn -89 I					x
autumn -89 II		x			
autumn -89 III		x			
spring -90 I		x			
spring -90 II		x			
autumn -90 I					x
autumn -90 II					x
spring -91 I		x			
spring -91 II		x			
autumn -91 I		x			
autumn -91 II		x			
spring -92 I	x				
spring -92 II		x			
autumn -92 I		x			
autumn -92 II		x			
spring -93 Ia		x			
spring -93 Ib		x			
autumn -93 Ia					x
autumn -93 Ib		x			
spring -94 Ia		x			
spring -94 Ib					x
spring -94 II		x			
autumn -94 Ia		x			
autumn -94 Ib					x
autumn -94 II		x			
spring -95 Ia		x			
spring -95 Ib		x			
spring -95 II			x		

mean values indicated that at least among the B-level texts purely narrative texts were easier for the readers than texts in which the text type varies.

The text with the weakest results among the whole B-level data was an expository text, as well as the texts with the best results. The percentages of right answers in these texts were as low as 43.9% and as high as 89.5%. This indicated that the texts of this type can be very difficult, but also very easy. Counting the average p-value showed that expository texts as one group were the second most difficult texts, which differs from what was observed with the A-level texts. The figure was 69.3%, only 2.44 percentage points higher than the corresponding figure for the miscellaneous texts. But because the range was so great, it appeared reasonable to study some other factors that made the texts easy or difficult. The criteria of readability are treated later in this study.

The third most difficult, and also the third easiest group in the B-level data was argumentative texts. Their average percentage of correct answers was 73.1%. The range among these texts was the narrowest compared with all the text type groups mentioned above. The lowest figure was 67.1% and the highest figure was 78.2%, so the difference was only a little more than ten percentage points. It means that the degree of difficulty was almost the same in all the argumentative texts.

The only instructive text had the second highest p-value among the averages. Because there was only one text of this type, the mean could not be counted. Although one text and its results do not necessarily show whether a certain text type is easy or difficult to read, we kept the only instructive text in the data, because of its value as the only representative of the instructive text type. We compared it as one text with other texts as their own groups counting their average percentages of right answers, and also with all the texts as one group. The figures indicated that the instructive text was closer to the mean of the narrative texts, the easiest group, than the mean of the miscellaneous texts. Compared with all the four averages, the 73.6% of right answers in the instructive text was the second highest rate. So an instructive text, at least this specific text, was not very difficult for B-level English students to read. In fact, when the instructive text was considered as one text among all the texts, its percentage of



right answers was more than four percentage points higher than the average B-level p-value in general from spring 1982 to spring 1995, which was 69.4%. So the degree of difficulty of the instructive text was not very high, on the contrary is seemed to be one of the easiest texts at the B-level. The text was the same as the only instructive text among the A-level. For A-level students it was even a little easier, because 75.3% of the answers were correct. The percentages of every B-level text are shown in table 4 .

Table 4. The proportions of right answers in each B-level text

time of the test	text I or Ia	text II or Ib	text III or II
spring 1982	76.25%	78.56%	71.22%
autumn 1982	-	-	-
spring 1983	77.69%		
autumn 1983	70.21%	69.07%	
spring 1984	73.63%	77.33%	64.84%
autumn 1984	62.11%	59.63%	60.49%
spring 1985	70.34%	75.62%	64.97%
autumn 1985	75.54%	65.13%	71.53%
spring 1986	68.45%	84.42%	74.88%
autumn 1986	60.52%	65.97%	43.86%
spring 1987	69.96%	71.22%	67.05%
autumn 1987	-	-	-
spring 1988	73.93%	75.82%	
autumn 1988	72.58%	61.92%	56.28%
spring 1989	76.16%	77.56%	73.72%
autumn 1989	51.42%	67.36%	59.47%
spring 1990	86.56%	89.47%	
autumn 1990	63.96%	70.88%	
spring 1991	75.57%	80.03%	
autumn 1991	72.85%	69.52%	
spring 1992	88.28%	79.33%	
autumn 1992	64.30%	62.33%	
spring 1993	74.41%	70.16%	
autumn 1993	62.46%	60.31%	
spring 1994	71.19%	80.07%	73.33%
autumn 1994	64.99%	68.06%	
spring 1995	79.66%	70.19%	78.20%

The range of all the B-level texts is greater than the range of the A-level texts, 45.61 percentage points. The lowest p-value is only 43.86%, whereas the highest p-value, 89.47%, indicates that in that test the proportion of correct answers has been very high.

The tables in which the average p-values of text types are presented are in chapter 10, because the results of A- and B-levels are treated there together. The groups are compared with each other in order to get a general picture of the results concerning text types.

This chapter has presented the results of our study when it comes to text type. The relative proportion of each text type on both A- and B-level has been introduced, as well as the text types that each of the A- and B-level texts represent. In this chapter we have also mentioned the proportions of right answers in each text and each text type on both levels.

In chapter 9 we present the other half of the results of our study. It deals with the five easiest and five most difficult texts of the spring and autumn examinations on both A- and B-level. These texts have been analyzed according to Fry's readability criteria that has been introduced in chapter 4.

## **9. COMPARING THE EASIEST AND THE MOST DIFFICULT TEXTS ACCORDING TO THE READABILITY CRITERIA**

### **9.1. A-level spring tests**

There are 16 A-level spring tests in the data of our study. The first of them is from spring 1980 and the last from spring 1995. In these tests there are 37 different texts. The number of texts in each test varies from one to three. The test of spring 1980 has only one text, the tests of spring 1981-1984, 1988 and 1990-1993 consist of two texts, and in the rest of the tests there are three texts.

The five texts which have given the best results are 1995: Ia (Three Cheers for Technology - Maybe), 1994: Ib (The Norman Rockwell Legend), 1987: I (The Language of Politics), 1988: I (Problems and Solutions) and 1992: II (Truths about the Incas). The weakest results are from the following five texts: 1980 (the test had only one text and it did not have a name), 1986: II (The Oxford Vote - a Don's view), 1990: I (Attlee: The Unknown Prime Minister), 1993: Ib (The End of History?) and 1989: II (Television Censorship?).

### 9.1.1. Text types

The first task was to find out which text types these ten texts represent. Most of them, seven out of ten, are expository texts. In addition there are two argumentative texts and one mixed text. The mixed text has descriptive, narrative and expository parts. Four out of the five easiest texts, including the one with the best results, are expository. The second easiest text is mixed. In the group of the five texts with the weakest results there are three expository and two argumentative texts. The most difficult text is expository. It would seem that argumentative text tends to be more difficult to understand than expository text because argumentation only occurs among the texts with the weakest results.

### 9.1.2. Vocabulary

In this group of ten A-level spring texts we found the prefixes *a-*, *anti-*, *co-*, *con-*, *de-*, *dis-*, *en-*, *ex-*, *extra-*, *il-*, *im-*, *in-*, *inter-*, *ir-*, *micro-*, *mis-*, *non-*, *out-*, *over-*, *para-*, *post-*, *pre-*, *re-*, *trans-*, *un-*, *under-* and *with-*. The most common prefix is *un-*, about 33% of all prefixes. The prefixes *il-/im-/in-/ir-* and *re-* also appear in the texts often. In the easiest five spring tests the p-values of words with prefixes vary between 0.82% and 1.98%. In the group of the most difficult spring texts the p-values vary between 1.07% and 3.18%. The average percentage in the easiest texts is 1.43% and in the group of the most difficult spring tests 1.95%. The difference between the average percentages of the text with the best and the weakest results is 0.52 percentage points. The difference is not very great, but because the treated figures are small in general, words with prefixes appears to be a factor that slightly influences the readability of a text; the more words with prefixes, the more difficult the text. There does not seem to be a great difference between the type of words with prefixes that appear in the easiest and the most difficult texts. Examples of the words that appear in the easiest texts are *illogically*, *reproduction*, *misleading*, *to outlast*, and *unwanted*. In the group of the five spring tests with the weakest results we found words like *to overestimate*, *to dislike*, *ungrateful*, *inevitable* and *preview*.

When it comes to compound words, the tendency seems to be the same as with words with prefixes; the more compound words, the more difficult the text. In the group of the easiest texts the number of compound words per text varies between 4 and 14. There are compound words like *university-based*, *full-time*, *assembly-line*, *decision-maker* and *mountain-top*. In the most difficult texts the corresponding figures are 4 and 13. For example compound words *long-term*, *ill-tempered*, *middle-class*, *market-oriented* and *prime-time* appear in this group. The number of compound words in itself does not tell us much because there is also a different number of words in each text, but if we look at the percentages we can see the difference more clearly. The percentages of the easiest texts vary between 0.40% and 1.23% and in the group of the most difficult texts between 0.61% and 1.18%. At this point the figures still seem very similar but if we look at the average percentages of each group, we begin to see some difference. The average percentage of the easiest texts is 0.73% compared to the corresponding percentage 0.86% of the most difficult texts. The difference is 0.13 percentage points. The difference is even smaller than the difference among the words with prefixes. However, there appears to be a relationship between the compound words and readability, although the relationship is weak. The result would suggest that compound words may make a text more difficult to understand and lower the scores in the reading comprehension test.

In the A-level spring texts we found only two words that met our criteria of a loan word. They are *phenomenon* in the group of the easiest texts and *data* in the group of the most difficult texts. The corresponding p-values are 0.09% and 0.17%. The same tendency that was found in the words with prefixes and in compound words seems to continue here but it is difficult to draw conclusions because there are so few loan words in these texts. We found some words of special fields in all the ten texts except one. Some words appear in the texts many times. There are words like *fascist* and *Marxist* in the text with the third best result that was about politics. In the group of the easiest texts we found also words like *cognitive science* and *schizophrenic*. The text with the fifth weakest result is about television and has for example the words *network*, *prime-time drama programme* and *editorial*

*standard*. Another of the most difficult texts is about a book written about politics, and has words like *capitalist enterprise*, *western liberal democracy* and *market-oriented authoritarianism*. In the group of the easiest texts the p-values vary from 0% to 1.84% and in the group of the most difficult texts from 0.36% to 1.99%. The average percentages are 0.61% and 1.42%, so there are more than twice as many words of special fields in the easiest texts as in the most difficult texts. This result again supports the hypothesis that all "unusual" words contribute to the lower readability of a text. This time also the words in the texts with the weakest results seem to be not only more numerous but also more difficult.

We asked our testee to pick five difficult words from each text. From the easiest texts he chose words like *unwittingly*, *undulating*, *piecemeal*, *congested* and *paternal*. The frequencies of the words he chose vary between 1 (*undulating*) and 756 (*thus*). A frequency for the word *anecdotal* was not found in the dictionary, so its frequency was counted as 0. Here we did not have to count separate percentages because we used the same dictionary of frequencies, so the corpus was also the same. We did count the average frequency of the five words our testee had chosen from each text. These average frequencies vary from 5.4 to 157.8 in the easiest texts and their mean is 51.4. Among the words in the most difficult texts our testee chose for example *bulky*, *polarization*, *floodlights*, *triumphalism* and *statutory*. The frequencies of the words from the most difficult texts vary between 1 (*polarization*) and 168 (*climate*). The frequencies for the words *scroungers*, *precariousness*, *practitioner*, *triumphalism*, *miffed* and *gory* were zero, which means that they were not found in the dictionary. The average frequencies in the most difficult texts vary from 9.6 to 128.4 and their mean is 43.3. The mean of all frequencies in the group of the easiest texts is 8.12 bigger than that of the most difficult texts. The difference is not very significant but it would seem that more rare words appear in the texts with the weakest results than in the texts with the best results, although we cannot draw any valid conclusions based on the opinions of only one testee.

### 9.1.3. Sentences

We counted the total number of words and the number of sentences in the five texts with the best results and in the five texts with the weakest results. In the easiest texts the number of words varies from 851 to 1140 and the number of sentences from 40 to 55. The average number of words in the easiest texts is 990 words and the average number of sentences 48. The average sentence length in the group of the easiest texts ranges from 16.4 words to 25.7 words. The longest text also has the longest sentences. The mean of the sentence lengths is 20.9 words per sentence.

The number of words in the most difficult texts ranges from 602 to 1160 and their mean is 896 words. The number of sentences varies from 34, a number shared by two texts, and 60. The average number of sentences is 48, which is the same as in the easiest texts. The average sentence length in the most difficult texts varies from 16.2 to 21.5, and the mean of the five texts is 18.8 words per sentence. When it comes to the A-level spring tests and their number of words, sentences and their average sentence lengths, our expectations were not fulfilled. We thought that we would find the most difficult texts longer and having longer sentences than the easiest texts but this is not the case. The difference between average lengths of the easiest and the most difficult texts is 93 words and the difference between the means of the average sentence lengths is 2.1 words per sentence. The easiest texts are both longer and have more words per sentence than the most difficult texts. In this case these factors do not seem to have had an effect on the results.

The next step was to count the p-values of the split kernels in the ten spring texts. According to the Kernel Distance Theory it makes a text less readable if the subject and the verb-object are split with distance. In the group of the five texts with the best results the p-values of split kernels vary between 8.43% and 14.46% and their mean is 10.67%. The element placed between the subject and the predicate can be very different in different cases. It can be one word, like *however* or a long phrase. Here are two examples from the text with the second best results (1994: Ib): He did not, however, retreat from unpleasant truths. and

His canvas, *The Problem We All Live With*, in which a sweet, neatly dressed black child clasping her books and ruler is escorted to school between a posse of deputy marshals, their heads and shoulders cut off by the frame, is impossible to look at without being deeply moved.

Among the most difficult spring texts the smallest percentage of split kernels is 9.82% and the biggest 12.73%. The average percentage is 11.06%. The elements placed between the subject and the verb object do not differ very much from the ones in the easiest texts. The sentence

The prime minister herself, as a part of her crusade to restore traditional moral values to the country, is determined to 'clean up' television -- a task which sits uncomfortably with her determination to deregulate the industry and extend the choice of the viewer.

is from the text with the weakest results (1989: II). The figures are very similar, but there is a difference of 0.39 percentage points between the average p-values of the easiest and the most difficult texts. Thus there appears to be a trend such that a great number of split kernels lower the readability of a text, although the difference between the p-values is marginal in the present study.

The use of active and passive voice in the texts went against our expectations. We assumed that more passive would be used in the most difficult texts than in the easiest texts. In the easiest texts the percentages range from 5.94%, which is very low, to 21.65%, and the mean is 14.25%. When it comes to the most difficult texts, the range is from 8.57% to 12.86%. The mean is 10.68%. In this case, again it is the other factors that influence the results. The following example is from the text with the fourth best result that has the biggest percentage of passive forms (1988: I):

On the one hand much is said and written about designing buildings which will be able to outlast their initial function whilst on the other hand architects are increasingly finding that old buildings need not be demolished but can often be easily converted to new uses.

The difference between the p-values is 4.57 percentage points, which is a more distinct difference than the differences in several other groups. However, the trend is now opposite Fry's theory. The difference suggest that the use of passive voice has not reduced the readability in the reading comprehension tests of the matriculation examination.

#### 9.1.4. Paragraphs

According to the readability factors (Fry 1988:78-88) a long paragraph often contains too many ideas, which reduces the readability of a text. When we count the average paragraph lengths from the five easiest and most difficult spring texts, the results do not seem to go along with this theory. The shortest paragraph among the texts with the best results has 29 words and it is in the same text with the longest paragraph which has 186 words. This text, which is the spring text with the fourth best result (1988: I) has also the highest average paragraph length of the easiest spring texts, 126.5 words. The lowest average paragraph length among the easiest texts is 70.6 words per paragraph (the spring text with the best results, 1995: Ia) and the mean is 98.3 words.

In the group of the most difficult texts the shortest paragraph has 32 and the longest 164 words. If we count the mean of the average paragraph lengths in the five spring texts with the weakest results, we find that it is lower than the corresponding figure in the texts with the best results, namely 87.9 words. The average paragraph lengths vary from 60.4 to 128.9 words in the most difficult texts.

#### 9.1.5. Organization

There are some further factors that increase readability according to Fry (1988:78-88); subheadings, signal words, repetition and concrete examples. In these texts we did not find any subheadings. However, in all the texts there are at least some signal words. The signal words *however, that is, by contrast, similarly, consequently,*



*hence(forth), yet, but, first, foremost, then, if, as if, even if, on top of that, (al)though, maybe/perhaps, thus, furthermore, moreover, therefore, nevertheless, nonetheless, unless, despite, instead and once* in the meaning 'kun' were found in the ten A-level spring texts.

In the texts with the best results the signal words are, unexpectedly, less common than in the most difficult texts. In the easiest texts the numbers of signal words are between four and sixteen. The lowest and highest p-values are also from these texts. The p-values vary between 0.47% (four signal words per a text of 851 words) and 1.58% (16/1012). The average p-value is 1.09%. The number of signal words in the group of the texts with the weakest results range from five (this text also has the lowest p-value) to twenty-one. In percentages the variation is between 0.77% (5/652) and 1.86% (18/967), and the average is 1.34%. The difference between the two average p-values is 0.25, which is not a great difference. However, the trend does not appear to be in accordance with Fry's theory.

We did not find any cases of Statement-Example-Restatement sequences in these ten spring texts. In this level the texts are so difficult that there is not much repetition. However, there are some concrete examples that make the text more readable. In the text with the best result (1995: Ia) a professor's opinions on technology and the effect it has on society are explained. Here is an example of how a concrete example is used in this text:

The bad news is that technology can make us stupid. Things that make us smart can also make us dumb. For instance, television has the power to inform and entertain. Peer into the nation's living room in the evening and what do you see: bored masses glued to their television sets watching soap operas, commercials and news of the complex events of the world reduced to a few minutes per topic.

In this text there are also a few more examples that help the reader understand the complicated concepts that the writer uses. Another thing that increases the readability of a text is when a concept or an item is explained in different words after it has been

first mentioned. Both concrete examples and explanations occur in the easiest spring texts.

In this respect there is not much difference between the two groups of spring texts. Similar examples and explanations can be found in almost all of the most difficult texts. The text with the fourth weakest result (1993: Ib) is about a controversial book that is about history and the political changes that have taken place in the recent years. In this text the concept of 'history' is explained this way: *It used to mean a grand clash of civilisations, religions, ideologies. People studied History for inspiration, linking it automatically with the present-day world.* The subjects that the texts with the weakest results are about are more difficult and abstract than the ones in the easiest texts, however, and this reduces readability in spite of the examples and explanations that can be found in the them.

#### 9.1.6. Personal words

The personal words *I* or *you* or their derivatives can be found in two of the easiest spring texts. In both of the texts the personal words are in direct quotations. In the text with the second best result (1994: Ib) there are three personal words in a text of 1027 words. In the other text, the one with the fifth best result (1992: II) there are four personal words out of 851 words. If we count the p-values of the personal words in the easiest spring texts, they vary between 0% and 0.47%, and their mean is 0.15%, which means that there are very few of them. Among the most difficult texts there are personal words also in only two texts. In the text with the weakest results (1980: I) the word *I* is used four times in a text of 1099 words, which gives a p-values of 0.36%. Three of the four personal words are in the same paragraph, where the writer gives background to the subject that he is about to talk about. In the text with the second weakest result (1986: II) the personal words *I* and *you* are used eight times altogether. Four of the personal words are in direct quotations and four are used when the writer talks about himself. The text has 1160 words, which means that the p-values of the signal words is 0.69%. The average p-values of all the five most difficult texts is 0.21%, which is higher than in the easiest texts. The difference is 0.06 percentage points, which

appears to be very small, although the tendency is not as expected, because in the most difficult texts there are more personal words than in the easiest texts.

#### 9.1.7. Imageability

Among the easiest spring texts there are two texts that are imageable as a whole. They are the text with the second best result (1994: Ib), that is about the famous painter Norman Rockwell and the text with the fifth best result (1992: II) that tells about the Inca empire. In both of these texts there are one or two abstract words, like *human integrity* or *civilization*, but they are so few that that they do not influence the imageability of the text. Here is an example of how the Inca empire is described in the text with the fifth best result: *The king's new representatives were instructed to respect the Incas and the visible signs of their civilization's grandeur: the paved roads, the great buildings, the terraced farmlands.* There are imageable words like *road*, *building*, *farmland* in the sentence. Also in the text about Norman Rockwell highly imageable words are used because Norman Rockwell's paintings are described very carefully.

Two of the easiest spring texts are not at all imageable. They are the text with the best result (1995: Ia) that is about technology and the text with the third best result (1987: I) that is about politics. There are some imageable words in these texts too but mainly the words that are used are very abstract. There is one text (1988: I) that is partly imageable, partly not. It tells about modern designers and their problems. There are abstract words like *technocratic society* but also imageable ones like *television*, *motor car* and *building* in the text.

In the group of the most difficult spring texts there are no imageable texts. There are three texts that are partly imageable (1980, 1990: I and 1989: II). These texts are about unemployment, the British Prime Minister Attlee and television censorship. Here is an example from the text with the third best result (1990: I) of how the job of a Prime Minister is made more concrete: *He admitted that it was no use 'pretending that he was colourful like Churchill' and likened the office of the Prime Minister to a good butcher, who knows where to chop and how to trim.*

The remaining two texts among the most difficult group cannot be considered imageable at all. They are about the academic world and politics (1986: II) and about a book that was written about history and politics (1993: Ib). In the latter text the word *book* is imageable but there are almost no other imageable words.

If we look at both groups together, we can see that there are more imageable texts among the easiest group than among the most difficult group. If we count the percentages, 40% of the easiest texts are imageable and 20% partly imageable. The rest, 40% are not imageable at all. Among the most difficult texts the percent of imageable texts is 0%. Three texts, 60%, are partly imageable and 40% of the texts (two) are not at all imageable. This lends support to our expectations of the texts with the best results being more imageable than the texts with the weakest results.

#### 9.1.8. Referents

We counted all the referents in the texts and compared their number to the total number of words in each text. Then we counted all the referents that are in the same sentence with the things to which they refer and compared their number to the total number of the referents.

The numbers in both groups are very similar. In the easiest texts the number of referents varies from 24 to 50. In percentages the variation is between 2.19% and 4.87% and the average p-value is 3.48%. The text with the highest number of referents also has the highest p-value but the text with the lowest p-value is not the one that has the smallest number of referents. In the texts with the weakest results the number of referents is between 17 and 45. These numbers are clearly smaller but if we look at the p-values the situation is different. The average among the most difficult texts is 3.37% and the percentages range from 1.86% to 5.83%. The average figures suggest that there is a trend such that the use of referents may improve readability. However, the relationship is weak, the difference of the two average p-values being only 0.11 percentage points.

In both the easiest and the most difficult texts about half the referents are in the same sentence with the thing to which they refer. This example is from the spring text that has the best result

(1995: Ia): *Professor Norman has written a number of learned books but in the recent years h e has been increasingly bothered by what h e feels is a lack of reality in academic research.* The number of this type of referent in the easiest texts varies between 9 and 25. In percentages this means a range from 36% to 70%. The average among the easiest texts is 53.5%. Among the most difficult texts the numbers of referents that are in the same sentence with their main word are between 8 and 16. The p-values range from 35.6% to 61.5% and average p-value is 47.3%. Thus there appears to be a relationship between the frequency of referents in the same sentence with the things to which they refer and higher readability. The difference between the two average p-values is 6.2 percentage points. The referents that are not in the same sentence with their main word usually follow in the next sentence but there are a few exceptions, like when the main word is in one paragraph and the referent in the following. This example of the former type is from the spring text with the weakest result (1980: I): *Ballyhightown is a municipal housing estate in the outskirts of greater Belfast. It has a long history of juvenile and adult unemployment.*

The type of referents is not different in the different groups. Most should not cause difficulties to the reader but there are a few cases that are not so clear. In the spring text with the weakest result there is the plural referent *they* that refers to a word in singular, the IBA (Independent Broadcasting Authority). This plural referent is used because in this case it refers to the people (= plural) that work for this particular organization. This may cause difficulties to a reader whose knowledge of the language is not so good.

#### 9.1.9. Substitution and ellipsis

There are not many cases of substitution or ellipsis in these texts. In the easiest spring text (1995: Ia) the word *one* is used instead of repeating the phrase *machine-centered orientation to life.*, and also to replace the word *role*:

Norman claims that society has unwittingly fallen into a machine-centered orientation to life, one that

emphasizes the needs technology over those of people, thereby forcing people into a supporting role, one for which we are most unsuited.

In the text with the third best result (1987: I) and in the text with the weakest result (1989: II) the verb *do* is used instead of repeating the verb form in the sentence. In the former text this occurs twice and in the latter once. This example is from the text with the third best result:

But now in our own time we are seeing a wholly new kind of manufacture, based on electronics and automation, which is widely expected to change the world at least as much as any of those earlier forms of industrialisation did.

In the other spring texts there are no clear cases of substitution or ellipsis. It is impossible to conclude if substitution or ellipsis has affected the results of these texts because there are so few cases of them.

## 9.2. A-level autumn tests

In the data of this study there are 15 A-level autumn tests. The oldest of them is from autumn 1980 and the latest from autumn 1994. In these tests there are 36 different texts. The oldest test consists of only one text, the tests of 1981-1983 and 1990-1993 have two texts, and in the other seven tests there are three texts.

Five texts with the best results in the autumn tests are 1985: I (Sharks), 1988: I (The Keyboard Generation), 1992: II (A Brilliant Navigator), 1991: I (Not Just an Observer on the Scene) and 1991: II (Writer's Clamp). The following five texts have given the weakest results: 1983: II (the text does not have a name), 1989: I (No Pushover), 1988: III (A Day with Mrs. Edwina Currie), 1985: III (Population: Will AD 2000 Mark the Turning Point?) and 1986: II (Canada - an Expatriate's View).

### 9.2.1. Text types

The majority of the ten texts again represent the expository text type but this time the distribution is more even. There are four expository, three argumentative, one narrative and two miscellaneous texts. One of the miscellaneous texts has narration and argumentation, and the other narration and exposition in it. There are three expository texts among the five easiest texts but the text with the best result is argumentative. There is also a miscellaneous text with narrative and argumentative parts in this group. In the group of the five texts with the weakest results there are two argumentative texts, one of which is the text with the weakest result, one expository, one narrative and one miscellaneous text. The miscellaneous text consists of narrative and expository parts. The same tendency as with the results from the spring tests appears to continue here even though it is not as obvious. There is more argumentation in the group of the most difficult texts than in the group of the easiest texts, and on the other hand, more exposition among the easiest texts than among the most difficult texts. This suggests again that expository text may be easier to understand than argumentative text. Narrative text also seems to be fairly difficult but we cannot draw any conclusions concerning the narrative text type from these results because among the 73 A-level texts that we had in this study only two were purely narrative.

### 9.2.2. Vocabulary

The prefixes *a-*, *ad-*, *anti-*, *by-*, *co-*, *de-*, *dis-*, *en-*, *ex-*, *extra-*, *il-*, *im-*, *in-*, *inter-*, *micro-*, *mis-*, *other-*, *out-*, *over-*, *pre-*, *re-*, *sub-*, *un-*, and *under-* were found in the ten studied A-level autumn texts. The prefix *un-* is again the most common, about 26% of all. Also the other prefixes that appear often are the same as in the spring texts, *il-/im-/in-* and *re-*. There is again a difference between the number of words with prefixes in the texts with the best and the weakest results. In the group of the easiest texts the p-values vary between 0.51% and 1.45%. In the group of the five most difficult autumn texts the variation is between 0.91% and 2.03%. The difference between the average p-value of the easiest texts (1.05%)

and the most difficult texts (1.35%) is 0.30. The difference is smaller than in the group of the spring texts but there still appears to be a weak relationship between the higher number of words with prefixes and the lower readability. In the easiest texts we found for example the words *misinformation*, *uninitiated*, *to coordinate*, *to encourage* and *insufficiently*. The words with prefixes in the most difficult texts were fairly similar, for example *pretension*, *disagreement*, *unreal*, *extraordinary* and *to disregard*.

The next thing we looked at in the texts were the compound words. In the easiest texts we found two compound words in one text, three compound words in one text, five compound words in two texts and seven compound words in one text. In the most difficult texts the numbers ranged from two to seventeen, which is a very high number compared to the others. The corresponding p-values vary from 0.24% to 0.94% in the easiest texts and from 0.28% to 1.11%, which is found in two texts, in the most difficult texts. If we look at the average p-values of the different groups we can see that the same tendency that has been found throughout the study when it comes to vocabulary seems to continue here also, even though the difference is again very small. The average p-value of compound words in the easiest texts is 0.58% and in the most difficult texts 0.64%. There is a difference of 0.06 percentage points, the number is higher in the group of the most difficult texts, as we assumed on the basis of Fry's theory (1988:78-88).

In the A-level autumn texts there are only two words that meet our criteria that for a loan word; *media* and *status quo*. They are both in the text with the weakest result of the ten autumn texts. There are some words of special fields in all texts except one, the text with the fourth best result. Among the easiest texts the p-values vary from 0% to 1.03% and in the most difficult texts from 0.52% to 2.22%. In the easiest texts we found words like *zoologist* and *page editor*. Translation to the word *scavenger* (*raadonsyöjä/asätare*) was given in the text with the best results. Among the five most difficult texts there were texts about politics and words like *democratic*, *cabinet minister* and *Tory MP*. The text with the fourth weakest result was about population and there we found words like *family planning* and *demographer*. The average p-value of the easiest texts is 0.57% and that of the most difficult texts 1.19%. The difference between these percentages is 0.62



percentage points, and that means that there are more than twice as many words of special fields in the most difficult texts as in the easiest texts.

Our testee also chose five words from each of the ten autumn texts. From the easiest texts he found words like *infinitesimal*, *vocational*, *unscrupulous*, *implementation* and *abundance*. The frequencies of the words chosen from the easiest texts vary from 1 (*deviser*) to 138 (*rid*). Frequencies for the words *to chuff*, *implementation* and *rigorously* were not found in the dictionary of frequencies, and their frequencies were counted as 0. The average frequencies of the words in the group of the texts with the best results range from 4.2 to 68 and their mean is 23. In the most difficult texts words like *advocating*, *expenditure*, *to chuckle*, *sovereignty* and *languidly* seemed difficult to our testee. The frequencies of the words chosen from the most difficult texts vary between 2 (*contemplation*) and 260 (*substance*). The frequencies of the word *sovereignty* was zero. The average frequencies in this group vary from 5.4 to 58.8 and their mean is 23.8. This is the first time that the results from our study fail to follow the tendency that there are more “unusual” words in the texts with the weakest results than in the texts with the best results, because the mean of the average frequencies of the most difficult texts (23.8) is actually higher than that of the easiest texts (23). However, the numbers are almost the same and if we look at the words in the most difficult texts, we find the word *substance*, the frequency of which is 260. If we ignored this word, the results would look very different.

### 9.2.3. Sentences

The number of words in the five autumn texts with the best results varies from 586 to 1245 and the number of sentences from 30 to 67. These numbers are from the same two texts, one of which is more than twice as long as the other. Still, the longer text is the one with the best results and the shorter text the one with the second best result. The average length of a text in the group of the easiest autumn texts is 828 words and the average number of sentences 43. The average sentence length in this group ranges

from 16.8 to 23.0 words per sentence and the mean is 19.5 words per sentence.

The shortest text among the most difficult texts has 541 and the longest 1534 words. The number of sentences varies from 18 to 82. The longest text has almost three times as many words and more than four times as many sentences as the shortest one. The average number of words is 921 and the average number of sentences 49. The average sentence length of the most difficult autumn texts varies from 12.5 to 30.1 words per sentence and the mean of all the five texts is 20.0 words per sentence. The text with the shortest average sentence length has many questions and one-word sentences in it, which lowers the average sentence length and of course also the mean of the five sentence lengths. This is one reason why the mean of the average sentence lengths of the most difficult texts is only 0.5 words per sentence more than that of the easiest texts. However, the most difficult texts are on the average 93 words longer than the easiest texts and so they also have on the average 6 sentences more than the easiest texts.

When it comes to the split kernels, there are generally fewer of them in the autumn texts than in the spring texts. In two of the easiest autumn texts less than 3% of the kernels are split. The lowest p-value is 2.35%. The highest p-value is 11.54% and the average as low as 6.97%. Here is an example from the autumn text with the third best result (1992: II):

This spirituality (which would be seen later in the Genoese religious sect of Jansenists) eventually led Columbus, almost on the verge of fanatical mysticism, to believe that he had been chosen by God to carry out a providential plan.

Among the most difficult texts the p-values of split kernels are again slightly higher. The p-values range from 5.13% to 10.75% and their mean is 7.25%. This example is from the text with the weakest result (1983: II): *"Prestige papers", he says, "are shaped to an important degree by what the leadership in the country wants to know and wants known."* There is a difference of 0.28 percentage points between the average p-values of the easiest and the most difficult texts.

In the use of the active and passive voice the autumn results differ from the spring results. This time more passive is used in the most difficult texts, just as we assumed in the beginning. In the easiest texts the lowest p-value is 3.28% (the text with the second best result) and the highest 16.25% (the text with the third best result), the average being 8.28%. Among the texts with the weakest results the corresponding numbers range from 3.85% (the text with the third weakest result) to 11.65% (the text with the fourth weakest result) and the average is 8.74%. The difference between the average percentages is not very big, 0.46 percentage points, but this result is along the lines of Fry's (1988:78-88) theory about the factors that increase a readability of a text. Here is an example of the use of passive from the autumn text with the weakest results (1986: II):

Cabinet ministers who had been accused of accepting bribes were pensioned off as ambassadors to small unwilling nations, and loyal yes-men were raised from obscurity under the garden stones of politics and given honorary titles.

#### 9.2.4. Paragraphs

The results from the autumn texts lend support to the theory that short paragraphs increase the readability of a text. In the easiest autumn texts the shortest paragraph has 30 and the longest 208 words. Both are in the same text (1985:I), which has the best result of the autumn texts. The average paragraph lengths vary from 68.8 to 138.2 words. The mean is 99.4 words.

In the group of the most difficult texts almost all the numbers are higher. The shortest paragraph has 26 words and the longest 302 words, which is almost 100 words more than in the longest paragraph of the easiest texts. The average paragraph lengths are between 73.7 and 170.4 words. The mean is 115.0 words, which is 15.6 words more per paragraph than in the easiest texts.

### 9.2.5. Organization

Also the autumn texts lack subheadings. The following signal words appear in these texts: *unless, but, because, then, if, even if, yet, therefore, however, despite, (al)though, nonetheless, whether and instead*. In the autumn texts the differences in the number of signal words were small. In the easiest texts the number varies between seven, in the text that also has the lowest p-value, and sixteen. The p-values range from 0.94% (seven signal words in a text of 748 words) and 2.05% (12/586), and the average is 1.51%. The average p-value of signal words in the most difficult texts is 1.42% and the p-values from the separate texts range from 0.60% (4/663) to 2.03% (11/541). The numbers of signal words in this group are between four and seventeen. The text that has the lowest p-value has also the smallest number of signal words. There is a difference of 0.09 percentage points between the average percentages. The difference suggests that there is a weak relationship between the use of signal words and high readability. However, it has to be remembered that signal words are more commonly used in expository and argumentative texts than in other texts.

When it comes to the Statement-Example-Restatement sequences, we did not find any cases in the autumn texts either. There is some repetition in the text with the best result that is about sharks (1985: I). In this text the same idea is brought up in many different places and with many different words. As in the spring texts, we found some concrete examples and explanations of abstract concepts also in almost all of the autumn texts. In the text about sharks the writer says that adult sand tiger sharks look ferocious and then goes on to describe their appearance. In the text with the fifth best result (1991: II) there is also a concrete example:

To be fair, she was no happy convert to the cult of Jason Donovan and we shared a joke about the way journalistic bylines were fast becoming 'my-lines'. You know the kind of thing: My Kind of Day, Ten Things I Like to Do with My Toothbrush.

In the autumn text with the weakest results that is about the press (1983: II) the writer talks about the power of the press and

then gives an example of what he means. The text with the second weakest results (1989: I) is about Lord McAlpine, the chief fund-raiser of the Conservative Party. In this text the writer gives an example of what happened when some politicians underestimated Lord McAlpine's toughness. The subjects that the texts with the best results are about are again clearly easier and less abstract than the ones the most difficult texts are about, so the examples and explanations in the most difficult texts do not seem to have a very big influence on the readability of these texts.

#### 9.2.6. Personal words

In the autumn texts there are personal words in all the texts except one. The personal words *I* and *you*, and their derivatives *me* and *my* appear in the easiest texts. In three of the texts the personal words appear only in direct quotations and in the rest two they give the writer's point of view. The text with the best result (1985: I) is written entirely from the writer's point of view. In the text with the fifth best result (1991: II) 24 out of 31 personal words are used when the writer describes his own experiences and only seven are in direct quotations. In the easiest texts the number of personal words varies between three and thirty-one. These are the texts that also have the lowest and the highest p-values. The percentages range from 0.51% (three personal words in a text of 586 words) to 4.51% (31/688), and their mean is 1.81%.

Among the most difficult texts there is one text without personal words (1985: III). In the other four the p-values range from 0.18% (1/541) to 1.63% (25/1534). In the text with the weakest result (1983: II) the personal word *I* is used when the writer expresses his own opinion. In the texts with the second (1989: I) and third weakest results (1985: III) personal words are used only in direct quotations. The text with the fifth weakest results (1986: II) is written entirely from the writer's point of view. The mean of the most difficult texts is 0.87%, which is 0.94 percentage points lower than the mean of the easiest texts. There are more than twice as many personal words in the easiest texts as in the most difficult texts.

### 9.2.7. Imageability

All five autumn texts with the best results are at least partly imageable. There is one text that is imageable as a whole (1985: I) and four that are partly so (1988: I, 1992: II, 1991: I and 1991: II). Of these four partly imageable texts one is mostly imageable, two are about half and half and one includes more abstract than imageable elements. The best autumn text (1985: I) is imageable as a whole. It is about sharks, a very concrete subject. The writer describes very carefully what the sharks look like and how they act. Here is an example:

Adult sand tiger sharks, for example, look ferocious - they have daggerlike teeth that hang out and they always keep their mouths open. What particularly struck me was that sharks often look like grinning vampires inviting you to their castle.

Words like *shark*, *dagger*, *teeth*, *mouth* and *castle* have high imageability. In the second best autumn text (1988: I) especially the beginning has high imageability:

A girl of six has trouble distinguishing between the 'Ch' and 'Sh' sounds. She sits before a colour television screen and speaks into a microphone. If she gets the 'Ch' correct, a steam train enters stage right and chuffs across the screen. If her voice descends into 'Sh', the train stops and the engine ceases to puff its white smoke. When her voice recovers, so does the train.

In this part especially the words *girl*, *colour television screen*, *microphone*, *steam train*, *engine* and *smoke* are imageable. The text that has more abstract words than imageable ones is about Christopher Columbus (1992: II). The parts where it is described what Columbus looked like are imageable but the parts where the writer talks about his character are more abstract:

He was an unusual and contradictory man who should be considered, to be fair to him, not according to our own values but in the light of values of his time. (...) Columbus certainly had many faults, but he also had many great virtues.

For example the words *value*, *fault* and *virtue* are very abstract.

Among the autumn texts with the weakest results there are two texts that are partly imageable. One of them (1988: III) has more imageable than abstract elements. It tells about a day in a politician's life and there are many imageable words like *lawn*, *house*, *pond*, *newspaper*, *hand*, *press release* and *sweatshirt*. The other partly imageable text (1986: II) is more abstract than imageable and it is about Canada. It contains many abstract words like *civil society*, *federal-provincial jurisdiction* and *self-absorption*. There are also imageable words like *telephone*, *canoe*, *skates* and *owl* in the text. Here is an example from an imageable part of the text:

At one point they came upon a strong room with a door marked "Do Not Close This Door". It was shut. Glad to oblige, they swung it open and found inside a life-sized birch-bark canoe. It's been twenty years since I last sat in a canoe, but I still wake up some mornings in North London and remember slipping through the back-channels of Georgian Bay in the early-morning haze, feeling the craft's balance down my spine and watching the silver drops from the lip of the paddle breaking the stillness of the lake.

The remaining three texts among the weakest autumn texts cannot be considered imageable. Of course there are imageable words in all the texts but in these they are so few that they do not influence the imageability of the whole text. The weakest autumn text (1983: II) is about the press and politics. There are words like *myth*, *regime* and *nationalization* in the text. Also the texts with the second weakest (1989: I) and fourth weakest (1985: III) results are about abstract subjects. The former tells about Lord McAlpine, the conservatives' chief fund-raiser, and the latter about population growth. Both have many abstract words like *taxation*, *party expenditure*, *population policy* and *economic development*.

If we compare the p-values of the different groups, we find again that in the group with the best results the texts are more imageable than in the group with the weakest results. The p-value of texts that are imageable as a whole among the best texts is 40%, among the weakest texts 0%. The remaining three texts among the

best texts are partly imageable, and their p-value is 40%. In the group of the weakest texts 40% are partly imageable, but 60% are not imageable at all.

### 9.2.8. Referents

The situation concerning referents among the autumn texts is very similar to the one found in the spring texts, except that the difference is slightly bigger. In the easiest autumn texts the average p-values of referents is 4.45%, in the most difficult 3.98%. The difference is 0.47 percentage points. Again, there appears to be a trend such that the use of referents may improve readability. In the group of the texts with the best results the number of referents is between 21 and 53. The percentages of referents vary between 2.81% (21 referents in a text of 748 words) and 6.08% (53/872). Among the most difficult texts the variation is between 2.28% (35/1534) and 6.64% (44/663). The smallest number of referents is 15 and the biggest 46. In this case the texts with the lowest and highest p-values are not the same that have the smallest and biggest number of referents.

When it comes to the referents that are in the same sentence with the things to which they refer, the p-values of the different groups are almost even. In the easiest group 46.1% and 46.5% in the most difficult group. This time the p-value is slightly bigger in the most difficult group. However, the difference is so marginal that there is practically no difference at all. In the texts with the best results the number of referents that are in the same sentence with their main word varies from six to twenty-seven. In percentages the variation is from 28.6% (6/21) to 52.9% (27/51). The corresponding p-values in the texts with the weakest results are between 6.8% (3/44), which is very low, and 80% (12/15), which in turn is very high. The numbers of this type of referents in this group of texts are between three and twenty-one. The text that has the biggest number of referents in the same sentence with the word they refer to is not the same text that has the highest p-value.

In the autumn text with the weakest result (1983: II) there are two referents in plural that refer to a thing in singular, for example: *The leadership in the country is also shaped to an*



*important degree by what the papers tell them.* There are also three such cases in the text with the second weakest result (1989: I), for example:

He ordered 500 copies of the Labour Party Manifesto from their headquarters and sent one to each of his wealthy targets with a note that read: "When you have a look at this, perhaps you would like to send us some money."

This may cause confusion if the language skills of the reader of the text are not very good. It may also cause difficulties in understanding if the referent is very far from the thing to which it refers. In the text with the third weakest result (1988: III) there are two cases where the thing to which is referred comes many lines after the referent, for example:

But she stopped. It was journey's end. She had at last found something in the Ideal Home Exhibition which had been made in Britain. Mrs Edwina Currie agreed to be photo-graphed with the grass.

There is also one case where the referent comes about six lines after the things that it refers to.

#### 9.2.9. Substitution and ellipsis

As in the spring texts, substitution and ellipsis are rarely seen in the ten autumn texts we examined. In the text with the second best result (1988: I) the verb *do* is used instead of repeating the verb form in the sentence in two different places. There is also a case of ellipsis:

But if a computer-conscious youngster rudely commanded the computer to 'fuck off' (or 'bugger off' or 'piss off'), it replied 'And you too', simply by responding to the word 'off' as a sentence ending.

In the answer to the command the verb form is left out completely. Also in the text with the fifth best result (1991: II) the verb *do* is used to replace the verb form instead of repeating it: *If*

*this sounds like the sour grapes of one who envies the Famous, that is because I do.*

Among the most difficult texts the verb form *do* is used in the text with the third weakest result (1988: III) to replace the verb form. There is also a case of ellipsis, where instead of answering the question with the complete verb form only the verb *would* is used: *Would she wear a sweatshirt? She would. Shorts? She would not.* In the second question all elements except the garment in question are left out.

### 9.3. B-level spring texts

In the data of this study there are altogether 14 B-level spring tests. The oldest test is from spring 1982, which was the first B-level test ever organized, and the latest test is from 1995. In those 14 exams there are 35 different texts. The test of 1983 has only one text, five tests consist of two texts, and all the other tests have three different texts.

Five texts with the best results are the texts 1990: II (Market towns), 1992: I (Three pounds' worth playful hell), 1990: I (Let the forest burn), 1986 :II (Shy giants of the hills) and 1994: Ib (The Norman Rockwell legend). The texts with the weakest results are 1984: III (The colleges of Oxford University), 1985: III (American culture now), 1987: III (Goodbye, Dr. Spock), 1986: I (Safety net fails) and 1987: I (A new challenge for dame Jennifer Jenkins).

#### 9.3.1. Text types

First we looked at the text types of these ten texts. Both the easiest and the most difficult texts were expository texts, like the majority of all the texts. Among the five easiest texts there are altogether three expository texts, one narrative text, and one miscellaneous text with descriptive and expository parts. Two of the five most difficult texts are expository, one is argumentative, and two are miscellaneous. One of these miscellaneous texts is a mixture of narration and argumentation, and the other is a mixture of description and argumentation. This shows that in the easiest texts there is a little more exposition than in the most difficult texts, whereas argumentation only occurs in the group of the five

most difficult texts. The result suggest that an argumentative text may be more difficult to understand than an expository text.

Another interesting matter is that among the most difficult texts there are two first texts of the exams in addition to the three third texts. These two texts are the same which are of mixed type. Two types in a text is a factor that appears to make understanding more complicated than if a text is mainly of one type only.

### 9.3.2. Vocabulary

We picked up words with certain prefixes, *co-*, *de-*, *dis-*, *en-*, *ex-*, *extra-*, *il-*, *im-*, *in-*, *inter-*, *ir-*, *meta-*, *mis-*, *non-*, *over-*, *pre-*, *re-*, *super-*, *trans-*, *un-* and *under-* were found in this group, from the five easiest and the five most difficult texts. Prefixes *re-* and *in-/im-/il-/ir-* are the most common, more than 50% of the prefixes belong to this group. In the texts with the weakest results there are more words with prefixes than in the texts with the best results. Between the average p-values 0.85% and 1.39% of all the words of the texts the difference is 0.54 percentage points. The figures suggest that the high number of words with prefixes may reduce readability. Among the easiest texts the p-values vary between 0.43% and 1.17%, and there are words like *illiterate*, *unfortunately* and *reproduction*. Among the most difficult texts the p-values vary between 0.69% and 2.02%, and there are words like *interwoven*, *dislike* and *unhappy*. The words themselves do not seem to be more complicated in the most difficult texts than in the easiest texts, there are just more of them.

When it comes to compound words, there is also an assumed difference between the easiest and the most difficult texts. In the five easiest texts the number of compound words vary between one and seven. In percentages, which tell the truth better than just the numbers, the variation is between 0.13% and 1.01% of all the words of the texts, and the mean is 0.51. There are words like *best-known*, *black-bear* and *city-weary*. In the five most difficult texts the number of compound words vary between one and sixteen words. Although sixteen is a much bigger number than the seven of the easiest texts, the p-values still tell more about the actual proportion of the compound words. And on the other hand, one does not always mean the same thing. In the

easiest texts one means 0.13% and 0.14% - there are two texts with only one compound word - whereas in the most difficult texts the same figure means 0.20%, which is the smallest p-value in this group. The biggest p-value is 1.17%. It is in a text that has 10 compound words, so the number of these words is not the biggest in this group. The average p-value of the five most difficult texts is 0.70%, which is clearly bigger than the corresponding p-value of the five easiest texts. The difference is 0.19 percentage points. Thus there appears to be a relationship, although weak, between the high number of compound words and reduced readability. In the most difficult texts for example following words are used: *full-price*, *self-transformation* and *bungalow-mania*.

As for the loan words and the words of special fields there are words like *criteria*, *vice versa* and *minutiae* in the five easiest B-level spring texts. In one of the texts there are not any words that would meet our criteria, and two of the texts have two words for this group. Two texts have one word each. In percentages these figures are between 0% and 0.26%, and the average p-value is about 0.15%. Among the five most difficult texts we found a little more of loan words and words of special fields, because there is at least one text that has clearly a medical theme. There were for example *aegis*, *stimulus* and *ammonia* in the texts. The smallest number is two words per text (two texts have that figure), and the biggest number is as high as 8. The p-values vary between 0.14% and 0.88%. The average p-value is 0.47%. According to these figures there is a difference between the five easiest and the five most difficult texts. The average p-value of the most difficult texts is 0.32 percentage points bigger than the corresponding figure of the easiest text. The trend appears to be in this case perceivable, because the original figures are so small.

Among the five easiest spring texts our testee chose words like *livestock*, *borough*, *controversy*, *hibernation* and *vigorous* as difficult words. (Here we took one example word from each text.) The frequencies of all the 25 words vary between 2 (*cacophony*) and 152 (*concept*). In this case we did not count the percentages because all the frequencies were checked from the same dictionary, so the corpus was always the same. However, we counted the mean of the five frequencies of the chosen words in every text. These means vary from 19.2 and 73.2, and the average

of all the frequencies in five texts is 37.8. Among the five most difficult spring texts the testee chose for example *dormitory*, *vehicle*, *prominent*, *lobe (epilepsy)* and *renown*. The smallest frequency in the group is 0 (*tutorial*), and the biggest frequency is 146 (*fierce*), which are only a little smaller figures than among the easiest texts. Nevertheless, the means are smaller. The means of each text vary between 5.4 and 49, and the total average is only 17.6. The difference compared with the easiest texts is 20.2, which suggests that there may be rarer words in the most difficult texts than in the easiest texts.

### 9.3.3. Sentences

In the five easiest texts the total number of words varies from 694 to 1027, and the number of sentences from 34 to 41. In the shortest text there is the biggest number of sentences, in the longest text there is one sentence less. Among these five texts the average sentence lengths vary from 16.9 words to 25.7 words. The mean of all the five sentence lengths is 20.7 words.

The number of words among the five most difficult texts varies from 494 to 1459. The shortest text has 17 sentences and the longest has 77. The average sentence lengths vary from 15.3 words to 29.1 words, so the variation is bigger than among the five easiest texts. When the mean of the five sentence lengths is counted, the result is 21.4 words per sentence which is a little more than the corresponding figure in the easiest texts.

We counted all the kernels of the five easiest and the five most difficult texts. Then we separated the kernels in which the subject and the predicate are split from the kernels in which they are together. We counted the percentage of the split kernels in every text. Among the easiest texts these percentages vary between 6.85 % and 15.63%, and the average is 12.14%, if all the five texts are taken into account. In the easiest texts the text placed between the subject and the predicate is often shorter than in the most difficult texts. The sentence *In January or February, usually every other year, a female black bear - called a sow - gives birth to two or three cubs* is a good example of separated kernels in the easiest texts. (Taken from the text with the fourth best result, which has the highest percentage of split kernels among the easiest texts.)

Often there is only one word, like *however* or *indeed*, in the middle of the kernel.

In the texts with the weakest results the p-values of split kernels are clearly higher than above. The figures of the five easiest texts vary between 12% and 33.3%. The mean is 21.2%. Here is a typical example of split kernels from the text with the highest p-value (33.3%), which is the text with the second weakest result: *Audiences for performances - be they indoors or outdoors, full-price or free - have continued to grow*. According to these figures there appears to be a trend that the higher the number of split kernels is the more difficult the text is to read.

In the use of active and passive voice there were not very big differences between the easiest and the most difficult texts. In the five easiest texts the p-values of predicate verbs in passive vary between 3.13% (the fourth easiest text) and 19.12% (the third easiest text). Other three p-values are all around 10%, and the mean is 11.66%. The third easiest text with its 13 passives makes the total percentage higher. This example of passives is from the easiest text (1990: II): *The king had to be convinced that a new market town was needed in the locality and, in general, permission would not be granted unless the nearest market was more than six miles away.*

Among the five most difficult texts, the lowest p-value of predicate verbs in passive is 4.94% (the third most difficult text) and the highest is 20.20% (the fourth most difficult text). Also the average p-value is just a little higher than the corresponding figure in the easiest texts, 12.47%. The fourth and the fifth text of the group affect the average percentages. They are clearly different from the other three figures which vary between 9.33% and 15.69%. Here is an example of passives in the most difficult texts, taken from the most difficult text (1984: III): *And these powers are vested in a governing body which consists of the dons (known as Fellows) who act as tutors of the college.* There appears to be a relationship between the use of passive voice and low readability, although the relationship is weaker than for example the relationship among the split kernels above.

#### 9.3.4. Paragraphs

When we counted the average lengths of the paragraphs in all the texts, we were interested in the number of words in every paragraph. As to the B-level spring tests the theory of short paragraphs being more readable than long ones appears to be supported. The shortest actual paragraph has only 16 words, it is in the text in which also the average paragraph length is the shortest (the second easiest text). The longest paragraph of the easiest texts is correspondingly in the text with the highest average paragraph length (the easiest text), and it has 143 words. In the five texts with the best results average paragraph lengths vary between 53.5 words and 87.4 words. The mean of the five average lengths is 71.8 words in one paragraph.

Among the five texts with the weakest results paragraphs are significantly longer, on an average, than in the group described above. This appears to be one factor that may have weakened their readability among the students taking the matriculation examination, although it must not be forgotten that the paragraph length is not a significant factor in short texts. The shortest paragraph has 25 words, and it is in the text which has only the third lowest average paragraph length (the second most difficult text). The longest paragraph is logically in the text with the highest average sentence length (the third most difficult text), and there are 216 words in it. The average paragraph lengths vary between 75.5 words and 145.9 words. The mean of all the five figures is 107.0 words/paragraph.

#### 9.3.5. Organization

As for the organization of the texts, there are not subheadings at all in these texts. But there are some signal words, which make the text more easily readable. Among the five easiest and the five most difficult texts of the B-level spring tests we found the following words that are signalling something to the reader: *first, then, secondly, thirdly, for one thing, nevertheless, however, but, maybe/perhaps, if, whether, unless, again, all in all, probably, (al)though, because, furthermore, moreover, yet and henceforth*. There is a difference between the easiest and the most difficult

texts, although it is not very big. In the texts with the best results signal words are more common than in the texts with the weakest results. The numbers of the words in the five easiest texts vary from six to nineteen. In percentages this variation is from 0.78% (a text with eight signal words and 1027 words altogether) to 2.72% (the text with the highest number of signal words). The average p-value of the five texts is about 1.55%. In the five most difficult texts the lowest number of signal words is six/text and the highest is sixteen/text, so these figures are almost the same as among the easiest texts. However, if these numbers are changed into percentages, the figures vary between 0.72% and 1.29%. The lowest p-value is a little higher than the lowest one of the easiest texts, but in the highest p-values the difference is as expected. The average p-value of the most difficult texts is 1.04%. These figures suggest that in difficult texts there may be more signal words than in easy texts.

As for the Statement-Example-Restatement sequences there is not much repetition in any of these texts. No clear difference can be seen between the five easiest and the five most difficult texts. Naturally some key words had to be repeated in the texts, but entire items were seldom repeated, and they were never repeated word by word, they were explained in some other words. The text with the best results (1990: II) can be mentioned as a good example of the best texts. The word 'market' was very precisely explained:

It is the concession granted, by the lord of the manor house, to a community permitting the meeting together of people for the buying and selling of food livestock at a fixed time and place.

In the second easiest text (1992:I), which handles the day of a school meals supervisory assistant in Britain, the salary is first compared with the salary of a cleaner. Later, the job is compared again with the job of a cleaner. Although the viewpoint is not the money any more, the profession of a cleaner and the comparison of these two jobs are repeated.

In the text with the weakest results (1984: III), which handles Oxford University, the tutorial system of the university is explained:



Oxford has developed a method of informal, individual instruction - the tutorial system - which requires that each undergraduate, sometimes alone, sometimes with another, must produce an essay or other written exercise to be discussed and criticized by a tutor at least once a week.

In one of the most difficult texts (1985: III) there are many well-known persons mentioned as concrete examples and representatives of certain fields of art and culture, but probably not many of them are very well-known by most of the Finnish upper secondary school pupils, for example Twyla Tharp and Gail Godwin. That kind of concretizations cannot increase the readability very much.

#### 9.3.6. Personal words

In the five easiest B-level spring texts there are two texts in which personal words *I* or *you*, or their derivatives are used. The writer of the text with the second best result (1992:I) has written the whole text from his own point of view. There are twenty-one *I*-words and five derivatives, and six *you*-words and three derivatives, so there are altogether thirty-five personal words, which is 5.04% of all the words of the text. In the fifth easiest text the writer takes the personal viewpoint only in one paragraph. He uses *I* twice and *me* once, so there are three personal words. It is not necessary to count the p-value of the words in the whole text, because this style is used only in one paragraph, but the p-value of personal words in that particular paragraph is 3.13%.

In the five most difficult texts there are also two texts in which personal words are used. In the third most difficult text there are six *I*-words and three derivatives, and ten *you*-words and nine derivatives. In percentages these personal words are 1.87% of all the words of the text. In the fourth most difficult text there is only one personal word *I*, which is not very much in the text with 906 words.

There is a difference in the qualities of the easiest and the most difficult texts that use personal words. In the easiest texts the writer of the text always writes from his/her personal point of view, but in the most difficult texts the personal words are never

actually used by the writer, they are all in direct quotations, so they are someone else's words. The figures do not suggest that there would be a clear connection between the use of personal words and readability.

Not all the existing personal words are used in these texts. Only *I, me, my, you* and *your* were found in the five texts with the best and the five texts with the weakest results, and the most often they were *I* or *you* as subjects.

### 9.3.7. Imageability

The five texts with the best results among the B-level spring tests are more imageable than the five texts with the weakest results. The most imageable texts of the easiest texts are the second and the third easiest texts (1992:I and 1990:I). Also in other three texts there are imageable paragraphs although a part of the paragraphs are not so imageable.

The second easiest text is the writer's description of his experience as a school meals supervisory assistant (SMSA, abbreviation also used by the text itself), in which his opinion of the job is very clearly on view. The whole text is based on very imageable description, for example this extract:

"Sir, whose ball is that? Sir , can we play with that ball for a moment? Sir, give me your hand for a minute." My eyes were turning like radars, spotting ambushes, counting enemy forces as they grouped and regrouped in a constant stream of danger.

Words like *ball, hand, eyes* and an expression like *turn like radars* make the text highly imageable. Also when the writer describes the job of a house cleaner as being something wonderful compared to the job of a SMSA he uses imageable words.

The third easiest text tells about the great fires in the Yellowstone National Park and the authorities' let-burn policy. It uses many graphic examples and descriptions of the intensity of the fires for instance, matters that otherwise would not be so clear. As an example a sentence from the first part of the text: *Fires jumped over roads, rivers and canyons as easily as a deer leaps*

*over a log*. When readers read this sentence, they can form a clear picture of the situation in their minds.

In the five most difficult texts there are much less of imageable words and expressions than in the easiest texts, even if the actual number of the words were counted, but especially the general imageability of the texts is much smaller. Of course some imageable words occur also in the most difficult texts, for example in the third most difficult text (1987: III) the words *mother*, *father*, *baby* and *child* are mentioned very often, because the text tells about an institute where parents are taught how to multiply their baby's intelligence. However, these words are not enough to make the whole text very imageable, because the founder of the institute and his theories are in the main role in the text. This example sentence does not include very imageable words: *His odd brand of science combines developmental psychology, neurology, and anthropology*.

If the texts are looked at as whole, as we did here, among the five easiest texts there are two imageable texts, which is 40% of the texts. Among the five most difficult texts none of the texts are really imageable, so the percentage is 0%. However, all the texts are partly imageable.

### 9.3.8. Referents

As for the number of referents there is not much difference between the texts with the best and the texts with the weakest results in the B-level spring tests. Actually in the five most difficult texts there are more referents than in the five easiest texts. The numbers of referents were compared with the length of the texts (the number of words). Then they were compared with each other.

In the five easiest texts the numbers of referents vary between twelve and fifty. In percentages the variation is from 1.73% (1990:I) to 4.89% (1986: II), and their mean is 3.33%. The text with the lowest number of referents also has the lowest p-value, but the text with the highest p-value is a text that has 38 referents. The numbers of referents that are in the same sentences with the things to which they refer vary from eight to twenty-five, and the p-values of all the referents vary from 44.4% to 83.3%. Their mean

is 59.9%, so a little less than half of the referents are at least a little delayed. However, usually these referents are in the following sentences with the things to which they refer. In the five easiest texts there are not any referents that could be thought to lower the readability for some reason. Referents in plural refer to words in plural, or to many things, but those things are usually mentioned consecutively so that it is not difficult to perceive them. And for example in the text with the highest percentage of referents a great part of them refer to words meaning a bear (*a bear, bears, members of the species, a bear mother, the adult male or a cub*), namely 35 of the 38 referents belong to this group. This very typical example is from the third easiest text (1990: I): *Henceforth, if Rockwell ever painted a package or a letter, he had it weighed first at a post office.*

Among the five texts with the weakest results the numbers of referents vary between ten and sixty-nine, so the lowest number is a little lower than the lowest number of the easiest texts, but the highest number is unexpectedly much higher than the corresponding figure of the easiest texts. The p-values in the most difficult texts vary from 1.19% (1985: III) to 4.91% (1987: I). The lowest p-value is lower and the highest one is higher than the corresponding p-values of the easiest texts. The mean of the percentages is 3.70%, so it is more than the average p-value among the five easiest texts, which does not lend support to our assumptions. However, the difference is very small. The numbers of those referents that are in the same sentences with the things to which they refer vary between ten (in two texts) and forty-one. A text with the lowest number actually has the highest p-value, 100% (1985: III). The other text with ten this kind of referents has the lowest p-value, 23.8% (1987:I). The text with the highest number of referents also has the highest number of referents in the same sentence with the things to which they refer, namely 41 of them, so the percentage is only 59.4% (1987: III). Most of the referents in the most difficult texts seem to be easily perceivable, too, but there are some that may cause confusion. For example this extract from the third weakest text (1987: III).

Doman refuses to prove his claims to the scientific community; he's happy, he says, as long as his audience is convinced. They become convinced by watching daily

talent shows, performed by a pack of quite ordinary-looking children of supposedly enormous intellect.

The referent is in plural, but the word to which it refers is in singular, although it includes many people. This may cause difficulties in understanding the sentence. In the fifth most difficult text many referents refer to the same thing, as there was one example from the easiest text. However, the relative number is much smaller, 16 referents of the total of 42. A significant difference in these examples is also that the actual name of the person to which the referents refer is mentioned much more seldom than the corresponding word in the fourth easiest text. In the fifth most difficult text even new paragraphs often start with the referents only. A typical example of the easily perceivable referents is from the second most difficult text (1985: III): *Audiences for performances - be they indoors or outdoors, full-price or free - have continued to grow.*

### 9.3.9. Substitution and ellipsis

Substitutions and ellipses are very rare in these texts, so it is difficult to find any trends here. Among the five easiest texts there are two texts that do not have them at all (1990:I and 1986 : II). In the fifth easiest text the nominal substitute *one* is repeated three times and in the two other texts there is only one substitution per text. As an example a question and an answer from the second easiest text (1992:I, the first underlining is in the original text):

Do you know who looks after your child during the lunch hour?  
No, nor did I.

Among the five most difficult texts the situation is alike. There are two texts without any substitutions and ellipses (1984: III and 1985: III). In two of the texts there are two substitutions in each, and in the fifth text there is only one substitutions, so there does not appear to be much difference between the five easiest and the five most difficult texts. Here is an example of nominal substitutes from the fifth most difficult text (1987:I): *'It's often*

*easier to attract money to buy additional properties than to improve existing ones.*

#### **9.4. B-level autumn texts**

There are altogether 13 B-level autumn tests in our data. The first one is from autumn 1982, and the latest test is from autumn 1994. In the 13 tests there are 32 separate texts. In the first two tests (1982 and 83) there are two texts, as well as in the five latest tests (1990-94). All the other six tests include three texts. The Matriculation Examination Board did not have the results of the tests of the autumns of 1982 and 1987, so we could not take them in the comparison study. That is why there are actually only 11 B-level autumn tests and 27 separate texts in the final data.

Five texts with the best results are the texts 1985: I (The time we waste saving time), 1991: I (An interview with William Glasser), 1988: I (The keyboard generation), 1985: III (Sharks) and 1990: II (Butterfly house). The texts with the weakest results are the texts 1986: III (Cyprus: A nation divided), 1989: I (No pushover), 1988: III (Publishing now), 1989: III (Infinite energy) and 1984: II (Will it really rain tomorrow).

##### **9.4.1. Text types**

The easiest B-level autumn text is an argumentative text. There is also another argumentative text among the five texts with the best results. In addition to them there are two expository texts and one miscellaneous text. The proportion of the argumentative texts is especially high, because there are only two argumentative texts among the B-level autumn tests. This makes the result totally different from the result among the spring tests.

As far as the expository text type is concerned, the results are also different. Two out of the five easiest texts are purely expository, but among the most difficult texts there are actually four expository texts. One has to take into account that the vast majority of all the texts is expository, so one must not blindly rely on the result, but it may be indicative. The fifth text is of miscellaneous type. Basic differences in the results of the spring and the autumn tests would suggest that the text type is not a

decisive factor in text comprehension. This can also mean that, besides the text type, there are one or probably many other factors in these texts that together make a text easy or difficult to understand.

#### 9.4.2. Vocabulary

Prefixes *de-*, *dis-*, *en-*, *ex-*, *extra-*, *im-*, *in-*, *inter-*, *micro-*, *mis-*, *multi-*, *non-*, *pre-*, *re-*, *trans-*, *un-* and *under-* were found in this group of texts. This time the most common prefixes are *re-* and *un-*, about 43% of all the prefixes is either one those. Also *in-/im-* is almost as common as *un-*. Among the five easiest texts the average p-value of the words with prefixes is 0.94%. There is variation between 0.25% and 1.37%, and there are words like *uncomfortable*, *misinformation* and *disappear*. The mean of the corresponding p-values of the five most difficult texts is 1.30%, which is 0.36 percentage points. Thus there appears to be a trend such that the great number of prefixes may lead to lower readability. The p-values among the most difficult texts vary between 0.62% and 1.90%, and there are words like *independent*, *unpublish* and *rechargeable*. In addition to the average percentages both the minimum and the maximum percentages of these two groups are clearly different from each other. All these figures support the theory that the high amount of words with prefixes lowers the readability of a text.

In the number of compound words there is only a small difference between the five easiest and the five most difficult texts. However, the direction of this difference is as we presumed on the basis of Fry's theory (1988:78-88). In the easiest texts the numbers of compound words vary between one and twelve. In percentages this means between 0.17% and 1.15%. In this case the maximum and minimum numbers are from the same texts as the corresponding p-values. The mean of all the five percentages is 0.53%. In the easiest texts there are compound words like *sister-in-law*, *man-designed* and *money-seekers*. Among the five most difficult texts there are one to eight compound words per text. The lowest p-value is 0.19%, it is in a text that has two compound words. The highest p-value is 1.01%, in the same text with the highest number. This p-value is surprisingly clearly lower than

the highest p-value of the easiest texts. Nevertheless, the average p-value of the five most difficult texts is as high as 0.56%. It is 0.03 percentage points than the corresponding figure of the five easiest texts. *Long-standing*, *fund-raiser* and *wind-generator* are the example words from the most difficult texts.

In the five easiest texts there are not many loan words or words of special fields. Among the rare words there are for example *polythene*, *micro-electronics* and *lepidopterist*. The numbers of these words vary from one to six words per text, and the p-values vary from 0.13% to 1.02%. The mean of all the five p-values is 0.41%. In the five most difficult texts there are again more of these words, although neither of these figures can be stated to be big. There are words like *manifesto*, *hydroelectric* and *data*. The numbers of these words vary between one and six. The lowest p-value is 0.17% of all the words, and the highest is 0.76%. The average p-value is about 0.54%, which is 0.13 percentage points bigger than the corresponding p-value of the five easiest texts. Again the direction of the difference is as expected. However, there is one point of view that must be mentioned in this connection. Many of these loan words and words of special fields are words that we have in the Finnish language, too. So actually all of the words should not be very difficult for Finnish readers, on the contrary they are probably easier than many English words. Nevertheless, although some words are used in Finnish, they are so rare that they would be difficult to understand in a Finnish text, too.

From the five easiest texts the testee chose again 25 difficult words, for example *encase*, *perceive*, *distinguishing*, *ferocious* and *lepidopterist*. The frequencies are clearly bigger than among the B-level spring texts. The smallest frequency is only one (*lepidopterist*), but the highest frequency is as high as 775 (*insect*). These two words were in the same text. The five means of the frequencies vary between 29.2 and 190.6, and the average of all the 25 frequencies is 76.6. From the five most difficult texts the testee chose words like *utterly*, *contemplation*, *indisputable*, *incentive* and *alas*. Also here the figures were clearly higher than among the B-level spring texts, but still they remained lower than the frequencies of the easiest texts stated above. The lowest frequency is zero, actually three of the 25 words have the zero frequency



(*reshuffling, rechargeable* and *partiality*). The highest frequency figure is almost as high as among the easiest texts, namely 751 (*crop*). The means of the frequencies vary from 5.2 to 169. The total average is 69.4, which is 7.2 lower than the corresponding figure of the five easiest texts. The difference is not big, but the direction is expected.

#### 9.4.3. Sentences

Among the texts with the best results the number of words varies between 583 and 1245, and the number of sentences between 31 and 67. The longest text has the highest number of sentences, and the second shortest text, which has only three words more than the shortest one, has the smallest number of sentences. The average sentence lengths vary between 14.6 and 19.6 words. The mean of all the five figures is 17.5 words.

The direction is as we assumed beforehand if we compare the figures mentioned above to the corresponding figures among the texts with the weakest results. The shortest text has only 483 words and the longest text has 1037 words. So these texts are in general shorter than the five easiest texts. The numbers of sentences vary between 23 and 49, so that the shortest text has 23 sentences and the longest one has 49 sentences. The average lengths of the sentences in the five most difficult texts vary between 19.0 and 25.2 words. The figures are clearly higher than the figures in the easiest texts. The mean of the five figures here is 21.1 words per sentence, which is almost four words more than the average sentence length of the five easiest texts. There appears to be a relationship between long sentences and low readability.

As to the split kernels, the p-values are everywhere a little bit lower in the autumn texts than in the spring texts. In the five easiest autumn texts the proportions of split kernels vary between 7.27% and 12.99%. The mean of all the five p-values is 9.90%. The text which has the smallest percentage of split kernels is an interview with the questions of the interviewer and the answers of the interviewee by turns. This result would suggest that split kernels are relatively rarely used in spoken language. In most of the cases there is just one subject for different predicates in clauses that follow each other, for example:

When I asked why not, he told me that she was a member of a soccer team and had been excused from her last-period class to go to a game.

(Taken from the second easiest text which has the lowest percentage of split kernels in this group, 7.27%.) In this sentence the underlined subject is also the subject of another kernel which is not split.

Here, as among the B-level spring tests, the share of split kernels is clearly bigger in the five most difficult texts than in the five easiest texts. When all the five texts are taken into account, the lowest p-value is 10.8% and the highest is 24.0%. The former is about the same as among the spring tests, but the latter is almost ten percentage points lower. The mean of the five figures is 15.3%, which is over five percentage points higher than the corresponding figure in the easiest texts. The next example is taken from the most difficult text, which has the second lowest p-value of split kernels in this group, 11.2%:

Most of those who have followed what has taken place in Cyprus since independence in August 1960, and who are aware of the political errors, cruel mistakes, suffering and misfortune which have come to that beautiful island, will agree with his words.

Between the parts of this kernel of the main clause there are four unsplit kernels in subordinate clauses.

Among the B-level autumn texts there is a clear difference in the use of passive voice between the easiest and the most difficult texts, unlike among the spring texts. The p-values of passives in the easiest texts vary between 3.27% (the third easiest text) and 10.34% (the easiest text), others are around 5%. So passives are quite rarely used. The mean of the five p-values is only 5.56%. The text with the biggest share of passives is the easiest text, but on the other hand, also the text with zero passives is among the five easiest texts. The following example sentence is from the easiest text (1985:I): *Cheese and butter, in particular, must be protected from polluted air and wrapped biscuits, we are told, keep in better condition.*

The shares of passives among the most difficult texts vary between 6.0% (the third most difficult text) and 21.9% (the fourth most difficult text) of the kernels. Other figures are between 11.0% and 17.0%, and the average percentage of the five texts is 13.6%. The example of passives in the five most difficult text is from the fourth most difficult text (1989: III): *Devices are being developed which convert and deliver exactly the energy that is needed for specific tasks.*

#### 9.4.4. Paragraphs

As to the paragraph lengths in the B-level autumn texts, the average numbers of words are completely different from the corresponding figures in the spring texts. These results do not appear to support the idea that texts with short paragraphs would be more readable than texts with long paragraphs. However, in these texts there are other features that lower their readability, so it is not yet remarkable if one sector is against the presumptions.

The shortest paragraph of the five easiest texts has 29 words, and it is in the second easiest text, in which the average paragraph length is the third shortest (and longest, too) in this group. The longest paragraph, 268 words, is in the easiest text. Its average paragraph length is clearly the longest among the five easiest texts. Average paragraph lengths among the five easiest texts vary between 64.8 and 208.0 words, and the mean of the five figures is 121.7 words per paragraph. The easiest text has considerably longer paragraphs than any other text among the five easiest or most difficult B-level spring texts. The fifth easiest text is the only text in this group that has relatively short paragraphs, 64.8 words. The difference between it and the text with the second shortest paragraphs is over 30 words, because the third easiest text has 97.7 words/paragraph on an average. In addition to the text with the longest paragraphs there is also another text that has remarkably long paragraphs, 138.3 words.

The five most difficult texts have much shorter paragraphs than the five easiest texts. However, they are not exceptionally short in general, for example if they are compared with the easiest and the most difficult texts of the B-level spring tests. The shortest paragraph has 25 words. It is in the second most difficult text

which has also the shortest average paragraph length. The longest paragraph is unexpectedly in the same text with the shortest one, and it has 245 words. The only text in which the average paragraph length is more than 100 words is the most difficult text with its 115.2 words per paragraph. The shortest average paragraph length in this group is 79.8 words. The mean of the five average figures is 95.4 words per paragraph.

#### 9.4.5. Organization

In these texts there are no subheadings. As to the signal words, there are clearly more of them in the five easiest texts than in the five most difficult texts. The signal words that were found and counted in these texts were: *but, if, whether, maybe/perhaps, however, first, then, finally, eventually, (al)though, because, probably, instead, after all, therefore, unless, yet* and *in addition*.

Among the most difficult texts there is only one text that has more signal words than the text with the lowest number of them among the easiest texts. In the five easiest texts the numbers vary from eight to seventeen signal words per text. In percentages the variation is from 1.27% (a text with 16 signal words and 1245 words altogether) to 2.05% (a text with only 12 signal words and only 586 words altogether). The mean of the five p-values is about 1.61%. In the most difficult texts the lowest number is only five words and the highest is fifteen. The lowest p-value is 0.77% (a text with eight signal words and 1037 words altogether), and the highest p-value is 2.07% (the same text that has the highest number). The average p-value is here 1.23%.

In the B-level autumn texts Statement-Example-Restatement sequences are not very common. Between the five easiest and the five most difficult texts there is not a clear difference. Only the text with the best results (1985:I) is an exception with its several concrete examples. The whole text is primarily based on the writer's examples of the theory that we actually waste time when we try to save it. One example tells about the writer's trip to Budapest:

There was a fog over Budapest airport so we had to land in Vienna and go by bus from Vienna to Budapest. It

was a five-hour journey that I shall remember to the end of my days as being the most uncomfortable bus-ride I ever had.

In the five most difficult texts there are not many good examples. For example in the fourth most difficult text (1989: III) there are some concrete examples of the possibilities that modern technology has created for using naturally grown fuels: *In Brazil, the production of alcohol from sugar cane and grain for use as motor fuel has become big business.*

In these texts there is not actual repetition except the repetition of some important key words of the texts. Also in the fourth easiest text (1985: III) it is stated many times, always in different words, that sharks are not aggressive at all, as people tend to think. Other Statement-Example-Restatement sequences are all concrete examples of some ideas.

#### 9.4.6. Personal words

In the B-level autumn texts there are more personal words than in the spring texts. The words *I, me, my, mine, myself, you* and *your* are found in these ten texts.

Personal words are used in all the five easiest texts. In the text with the best result (1985:I) there is purely the writer's point of view all the time. There are fourteen *I*-words and seven derivatives, and ten *you*-words and eleven derivatives. This means that 3.08% of all the words of the text are personal words. Also the fourth easiest text (1985: III) has a clear personal point of view, although a part of the paragraphs just give facts about sharks and researches. However, the writer's own experiences run all through the text so that 2.09% of the words are personal words. The second easiest text (1991:I) is quite different from other texts, although there are 18 personal words, 2.26% of the words. The text is an interview of a psychiatrist who has studied the motivation of secondary school students. All the *you*-words (three altogether) are in the interviewer's questions, so they are not addressed to the reader but to the psychiatrist. Nevertheless, although the *I*-words with their derivatives have actually been said to the interviewer, they are also addressed to the reader of the article. In the other two

easiest texts all the personal words used are in direct quotations. In one of them the quotations are an essential part of the text - 1.54% of the words are personal words - but the other has only a few short citations of a speaking computer, so the personal words are not addressed to the reader.

Among the five most difficult texts there are two texts that do not have personal words at all. Only in the fifth most difficult text (1984: II) the viewpoint is the writer's own all the time. There are actually twenty *I*- words and twelve derivatives, but only one derivative of *you*. However, the total is 33 words, which is 6.83% of all the words. Almost all the other personal words of the five most difficult texts are in quotations. In the most difficult text a part of the personal words are in one paragraph in which the writer has taken a personal point of view, although in other paragraphs he/she does not write about himself/herself at all. Besides, the total of personal words in this text is very small, only seven words, which is 0.68%.

#### 9.4.7. Imageability

Among the B-level autumn texts the imageability situation is quite similar to the situation among the spring texts. Three of the five texts with the best results are imageable as whole texts, the easiest (1985:I), the fourth easiest (1985: III) and the fifth easiest (1990: II) texts. Although the easiest text is clearly more imageable than the two others, there are so many imageable words and expressions in them, too, that they can be counted as imageable texts. The easiest text tells about wasting time when trying to save it, and the whole argument is based on imageable and vivid examples from real life, for example: *The old-fashioned cork or lead cap to the wine-merchant's bottle is gradually being replaced by a plastic top that often requires a very strong wrist or a hacksaw to remove.* Even a simple fact that opening bottles is complicated is expressed using imageable words *wrist* and *hacksaw*. The fifth easiest text tells about a lepidopterist and his butterflies. Here is an example of its imageability: *Butterflies have many predators, including most birds and numerous insects that feed on caterpillars.* All the words referring to animals are quite imageable. Beside these three imageable texts there is one partly

imageable text and one non-imageable text among the five easiest texts. The partly imageable text (1988:I) begins with an imageable example of a little child using a computer and its learning program, but there is also a lot of non-imageable description of the general possibilities of the computer.

Among the five texts with the weakest results none of the texts is imageable as a whole, although in all the texts there are at least some imageable words. In the fourth most difficult text (1989: III) there are a few more imageable words than in the other four texts, but still the text does not consist of very many imageable expressions. There are many words that are related to different forms of energy, for example: *Devices are being developed which convert and deliver exactly the energy that is needed for specific tasks.* One of the imageable words in the text is *a windmill*. The most difficult text (1986: III) is about Cyprus and especially its political situation. So the vocabulary is politically accentuated and thus not very imageable. As an example a sentence said by Lord Caradon in the text: *"We have responsibility; we gave our undertaking and we have utterly failed to carry it out."*

The difference is clear between the easiest and the most difficult texts. Three out of five easiest texts are imageable, in percentages it is as much as 60%, whereas among the five most difficult texts the corresponding p-value is 0%, just like in the B-level spring texts.

#### 9.4.8. Referents

Among the B-level autumn texts the situation is very similar to the situation among the spring texts. There is not much difference between the easiest and the most difficult texts, at if only numbers and percentages are looked at. In the five texts with the best results the numbers of referents vary from nineteen to fifty-one. The text with the lowest number also has the lowest p-value, 1.83% (1985:I), but the highest p-value, 6.69%, is in a text with thirty-nine referents (1990: II). The mean of the five p-values is 4.74%. The same texts that have the lowest and highest numbers of all the referents, also have the lowest and highest numbers of those referents that are in the same sentences with the things to which they refer. The lowest and highest numbers of the referents in the

same sentence with the things to which are six and 27. The same texts also have the lowest and highest p-values of this kind of referents. The p-values are 31.6% and 52.9%. The average p-value is 43.3%. There are three texts in which the majority of the referents refer to the same thing. For example in the fourth easiest text 34 of the 51 referents refer to sharks. However, the actual word *shark*, or other word meaning about the same thing, for example *female shark*, is mentioned often enough so that the referents are not very delayed, and the reader can perceive what the referents are referring to. A typical and highly readable example is from the text with the best result (1985:I): *I was surprised to see my sister-in-law take a pair of nail scissors out of her bag. I feared she was going to embarrass me by cutting her nails in public.* In the five most difficult texts the numbers of all the referents vary between seven and 52. The lowest number is clearly smaller than the corresponding number among the easiest texts, but the highest one is slightly bigger. The same texts have the highest and lowest p-values, too, 7.18% (1989:I) and 1.45% (1984: II). The average p-value is 3.13%. The average percentages appear to be as expected, because the most difficult texts have lower figure than the easiest texts. So on an average there are fewer referents in the five most difficult texts than in the five easiest texts. In the text with the smallest number of referents there is also the smallest proportion of the referents that are in the same sentences as the things to which they refer. There are only two of those referents, and their p-value is 28.6%. The highest p-value of those referents is in the third most difficult text that has eleven of them, the p-value is as high as 78.6%. The mean of the five p-values is 46.57%, which is not as we presumed on the basis of Fry (1988:78-88), and Halliday and Hasan's (1976: 308-313) theories, because it is higher than the corresponding p-value among the five easiest texts. However, the difference is not very remarkable, only 3.31 percentage points. The majority of all the referents in this group are easily perceivable, but there are a few more referents that may cause problems in understanding than in the easiest texts. There are more than one referent that is in plural although the word to which it refers is in singular, for example this extract from the second most difficult text (1989:I): *But he does possess a fairly shrewd estimate of somebody's worth and, more*



*important, an idea how they may be used to his and their benefit. At least the use of the referent *their* is justifiable, because the singular possessive pronoun refers to him, who in this text is Lord McAlpine. Secondly, the plural possessive pronoun is neutral and so better in this situation. A readable example is from the text with the weakest result (1986: III): *I have spoken to many refugees, visiting them in their camps in 1976 before proper housing was built for them.**

#### 9.4.9. Substitution and ellipsis

As among the B-level spring texts, substitutions and ellipses are not very common in the autumn texts either. However, between the easiest and the most difficult texts there is a little more difference. Among the five texts with the best results there is one text that does not have substitutions or ellipses at all (1985:I). In one of the texts there is only one of them, and in the other three texts there are two of them in each. Three of the seven substitutions/ellipses are nominal substitutions. Here is an example from the third easiest text: *When her voice recovers, so does the train.*

Among the five most difficult texts there are only two texts that have substitutions/ellipses. So three of the texts do not have them at all. In the most difficult text (1986: III) there is one ellipsis and in the fourth most difficult text (1989: III) there are three nominal substitutions. Although the use of substitution and ellipsis is not very common in these texts, they seem to be slightly more often used in the easiest texts than in the most difficult texts.

## 10. CONCLUSION

Different text types seem to be difficult for A-level and B-level English students. Only argumentative texts had the same position in both groups. It was the second most difficult text type for all the students. Apart from that the order of the text types was different in the two different groups. For A-level students the instructive text formed the easiest group. Also for B-level students it was not one of the most difficult texts, because it was the second easiest group. But whereas at the A-level expository texts were the second

easiest, at the B-level they were the second most difficult. Miscellaneous texts were not very easy for either of the levels, they were the third most difficult texts for the A-level students and the most difficult texts for the B-level students. The biggest discrepancy was found in the case of the narrative texts: they were the most difficult texts for A-level students and the easiest texts for B-level students.

The position of expository texts was especially interesting. One reason why expository texts were the biggest group by far both at the A-level and at the B-level must be that in all the curricula published for the upper secondary school since the course system was introduced the themes have been primarily expository. Especially in the last courses informative texts were practically the only possible texts if teachers followed the plan. The courses from one to three dealt with an individual person and his/her personal matters, but the courses from four to eight at the A-level and from four to seven at the B-level included themes like society, technology and culture. Because the curricula of the A- and B-levels were alike apart from some minor differences, it seemed strange that the positions of expository texts in the results were so different. However, if the two average percentages of the right answers of the expository texts were compared, the difference was not so big after all. While at the A-level 71.8% of the answers were correct, at the B-level the corresponding percentage was 69.3%. Perhaps the missing eighth course is one reason why the ability of B-level students to read expository texts is a little lower than the facility of A-level students.

Although the expository texts were the only group that could really be compared with the curricula and therefore also with the upper secondary school textbook texts, the results of the narrative texts were so interesting that they deserve a paragraph of their own. Not only are the narrative texts the most difficult for one level and the easiest for the other, but also the average percentages of right answers are very different. At the A-level only 59.7% and at the B-level as many as 76.0% of the answers were correct. Tables 5 and 6 show the average percentages of correct answers of each text type both among A- and B-level texts.

Table 5. The average proportion of right answers of each text type in the A-level texts

narrative (2)	expository (37)	argumentat. (12)	instructive (1)	miscell. (13)
59.7%	71.8%	67.3%	75.3%	68.7%

Table 6. The average proportion of right answers of each text type in the B-level texts

narrative (3)	expository (41)	argumentat. (4)	instructive (1)	miscell. (13)
76.0%	69.3%	73.1%	73.6%	66.8%

On the basis of this study it cannot be said that a certain text type would be difficult or easy in general, because the results of the A-level tests were so different from the results of the B-level tests. The results of this study show only some tendencies. Argumentative texts appear to be quite difficult and instructive texts easy. However, it must not be forgotten that in the data of this study there was only one instructive text. It is possible that in this particular text there are some more important qualities other than the text type that make it easy. It is clear that also the questions themselves have an effect on the number of right answers in each test.

As to the readability criteria, our study lent clear support to Fry and Halliday & Hasan's theory. The tendencies were logical although the differences between the easiest and the most difficult texts were rather small. Every criterion met with the hypothesis at least in one of the studied groups, which were the A-level spring, A-level autumn, B-level spring, and B-level autumn texts. Most of the fifteen factors seemed to affect reading comprehension the way we expected in three or four of these groups. Table 7 below shows which criteria had an expected effect in each group.

Five of the factors had an expected effect on the results in all of the four text groups. According to the theory adopted, a large number of words with prefixes lower the readability of a text. Our study supports this theory, because in all of the four groups, texts with the lowest p-values had more words with prefixes than the

texts with the best results. Compound words had a same kind of effect: the more there were compound words in a text, the less the text produced correct answers. This applies to all of the four groups. The present study shows that also loan words or words of special fields (explained in the background) always lower the readability of a text, if there are a lot of them. The fourth factor that had an expected effect on the results in all the A- and B-level texts was the split kernels. When the subject and the verb-object of the texts in the data were far away from each other, the pupils gave more often wrong answers than in the texts in which the kernels were more seldom split. Imageability was the fifth factor having an expected effect in all of the four studied groups. It differs from the other four factors mentioned above, because high imageability does not lower readability, it makes a text more easily readable. In the study the texts with the best results were more imageable than the texts with the weakest results, although it must not be forgotten that imageability is partly a subjective concept whereas the other factors mentioned so far can be clearly categorized.

As to the frequencies of difficult words, the results of this study were in line with the hypothesis in three of the four groups. The chosen difficult words had a higher frequency in the easy texts than in the difficult texts. Only in the A-level autumn texts the result was not the same. If a word has a high frequency, one might suppose that it is familiar to more people than a word with a low frequency. Of course the words that were difficult for our testees are not necessarily difficult for other readers. However, the testees were about the same age as the pupils who have originally read the texts of the data of this study as belonging to their matriculation examination. One was also in the upper secondary school and the other had just finished the upper secondary school. So it is likely that their opinions of the most difficult words are close to the general opinion of students taking the test.

Sentence length was another factor that seemed to affect the textual understanding in three groups. The longer the sentences were, the weaker the result was. Only among the A-level spring tests the situation was not like that. That is why we drew a conclusion that long sentences are usually a factor that makes a text difficult to read and understand. Also a big number of

passives seemed to lower the readability of a text. As with the long sentences, an abundant use of passive voice made the texts more difficult in all the other groups except in the A-level spring texts. The signal words were the fourth criterion meeting with the expectations in three fourths of the groups. Again, among the A-level spring tests the result of this study was contrary to the hypothesis, which suggested that the use of signal words would help the reader understand the text better. In the other three groups there were more signal words in the easiest texts than in the most difficult texts, so it can supposedly still be considered as a factor that quite often raises readability. According to the hypothesis an abundant use of personal words helps textual understanding exactly like the use of signal words. Our study supports this hypothesis at least partly, because in our data the easiest texts had more personal words than the most difficult texts in all the other groups except the A-level spring tests.

The last factor with expected results in three studied groups was the use of referents in a text. In this case the B-level spring texts produced a result different from the other groups. We expected that if a text includes many referents, it has a high readability. In 75% of the cases it seemed to work in this particular way. We expected that sometimes referents can also cause confusion, especially if they are very far from the items to which they refer. That is why we thought that referents within the same sentence with the reference items more often raise readability than referents in general. However, in our study only in the A- and B-level spring tests the result supported this hypothesis. In the B-level spring tests this could be clearly seen, because only the referents that were in the same sentences as the reference items made the understanding easier. In the A-level spring tests all kinds of referents affected readability positively, so it is difficult to see whether the placement of the referents had any effect. In the both autumn text groups the result of this study was contrary to the hypothesis.

The use of referents in general appeared to raise readability, whereas the use of referents in the same sentence as the reference items appeared to lower it.

Paragraph length did not have as great an effect on the readability in the texts of our data as the sentence length. In only

two of the four groups the most difficult texts had longer paragraphs than the easiest texts, although our hypothesis according to Fry's theory supposed that longer paragraphs make a text less readable. The texts of the data were all relatively short, so the paragraph length was probably not a very influential factor. Another factor that supported the hypothesis in only two groups was Statement-Example-Restatement sequence (SER) or the use of concrete examples. Similarly to imageability, the SER is also a concept that is difficult to treat objectively, even though there were two of us analyzing the texts. At least this factor cannot be studied quantitatively like most of the other factors of this study. This has to be taken into consideration when the results are interpreted.

There were so little substitution and ellipsis in the texts of the data that it was almost impossible to see whether they had any effect on textual understanding. Only among the B-level autumn texts was there a clear, though slight, difference between the easiest and the most difficult texts, so that among the easiest texts there were more texts that included substitution or ellipsis at all than among the most difficult texts. However, in each of the texts there were so few cases of substitution or ellipsis that any reliable conclusions could not be drawn about their effect on readability.

Table 7 below shows clearly that the trends among the four studied groups were consistent despite the fact that in most of the cases the differences between the easiest and the most difficult texts were fairly small.

Summing up, the results of this study do not lend clear support to the hypothesis that the text type affects understanding so that certain text types would be easier for the candidates for the matriculation examination to comprehend than another text type, as the difference between the A-level results and the B-level results suggest. However, this result does not exclude the possibility that the text type does have an effect on readability in another situation. This could be an interesting subject for another study. If it were possible, it would be desirable for the study to include about the same number of texts of each text type. In this study this was not possible. However, it was interesting to see the distribution of the text types in the English tests of the matriculation examination. When we looked at the curricula of

Table 7. Readability criteria and how they supported the hypothesis in the four studied groups.

	A: spring	A: autumn	B: spring	B: autumn
prefixes	x	x	x	x
compound words	x	x	x	x
loan & special words	x	x	x	x
frequencies	x		x	x
sentence lengths		x	x	x
split kernels	x	x	x	x
passives		x	x	x
paragraph lengths		x	x	
signal words		x	x	x
SER/ concrete examples	x	x		
personal words		x	x	x
imageability	x	x	x	x
referents	x	x		x
referents in the same sentence	x		x	
substitution & ellipsis				(x)

English, we could see why so many texts were expository: the themes of the five last English courses of the upper secondary school would appear to call for a fair amount of expository texts. Also many texts of English books, at least in Passwords 1-8 (1990), are of the expository text type. This finding could be useful information for upper secondary school English teachers when they prepare their pupils for the matriculation examination and especially for the reading comprehension test.

As to the second hypothesis of this study, the results support it rather well. We expected that the factors that Fry, and partly also Halliday and Hasan, have listed have an effect on readability, also in a situation like the matriculation examination. There were four studied groups, the A-level spring and autumn, and the B-level spring and autumn texts, so we considered the general results to be as expected if the studied aspects were in line with expectations in three or four groups. If they were in line with

expectations only in two groups, the general result was not considered as expected, because in those cases there were also the same number of groups (and texts) that did not support the hypothesis. If we follow this principle, eleven factors out of fifteen met with the expectations. This means that almost two thirds of the factors have affected the textual understanding in the test situation between 1980 and 1995 in an expected manner. Also this result can be useful for upper secondary school English teachers. For example when they choose texts for the ordinary course examinations they could have some concrete basis to which they could pay attention if they want to choose a difficult or an easy text.

In addition to our two main hypotheses, we wanted to see if the language skills of Finnish upper secondary school students have improved with time. The main interest in studying this question is related to the fact that there was a great increase in reading research and cognitive psychology had an impact on views of reading even in Finland (cf. Blom et al. 1988, Linnakylä 1988, Linnakylä & Takala 1990, Takala 1981 and 1986, and Vähäpassi 1987) To find out whether this had made any difference we studied the difficulty level of the reading comprehension tests over time. We made three different lists for the A- and B-level tests. In the first list we placed the texts from spring 1980 to autumn 1990 in an increasing order of difficulty. Because there were not separate tests for both levels before 1982, the B-level texts are from spring 1982 to autumn 1990. The results of the tests from autumns 1981 (A-level), 1982 and 1987 were not available in the office of the Matriculation Examination Board. For the second list we counted the average proportion of the right answers for each English reading comprehension test. In this connection we noticed again that the results of the spring tests were clearly better than those of the autumn tests. This is because the students who took the exam in the autumn were usually those who had failed the test in the spring or who tried to improve their results. This is not so clearly the case nowadays, however. In the final list we counted the average proportion of the right answers for each year (spring+autumn), and placed them in an order of increasing difficulty. In this list the order was affected by the three (two in B-



level) tests for which we did not have the results. The lists can be seen in appendixes 3 and 4.

If we make a simplifying assumption that the inherent difficulty of the texts and tests is basically the same regardless of the year, our results give no reason to conclude that the students' reading comprehension ability would have improved in the 1980s. We tentatively draw the conclusion that any improvement in reading instruction in English which might have happened on account of advances made in reading research abroad and at home has not been sufficient to override the potential fluctuation in the inherent difficulty of the tests over the years. We wish to emphasize that this conclusion is tentative and rests on the validity of the simplifying assumption. A more detailed study may lead to a revision of this conclusion.

Besides the factors that have been taken up in this study, there is probably a long list of other factors that also affect textual understanding. When it comes to the texts of reading comprehension tests, one major factor is probably the questions. Even though they do not affect the actual understanding of a text, they can certainly have an impact on the result of the test. Questions were not dealt with in this study, but they would be an interesting and broad enough a theme for another study; the same concerns the psychological factors that are claimed to affect readability. One subject for further studies could also be some aspects studied here in relation to writing: how do candidates for the matriculation examination use for example passive voice or words with prefixes in their writing?

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**Appendix 1. THE TITLES OF A-LEVEL TEXTS FROM SPRING  
1980 TO SPRING 1995**

• **spring 1980**

I (no title)

• **autumn 1980**

I (no title)

• **spring 1981**

I (no title)

II (no title)

• **autumn 1981**

I (no title)

II (no title)

• **spring 1982**

I (no title)

II (no title)

• **autumn 1982**

I (no title)

II (no title)

• **spring 1983**

I PETER USTINOV

II THE INCREDIBLE POTATO

• **autumn 1983**

I THE MYSTERY OF MOODS

II (no title)

• **spring 1984**

I CLOTHES FOR THE SOCIAL CLIMBER

II THE SOCIAL STRUCTURE OF A SAMOAN VILLAGE

• **autumn 1984**

I 'SCOTTISH CROQUET'. THE ENGLISH GOLF BOOM 1880-1914.

II DO YOU INHERIT YOUR PERSONALITY?

III THE MASTER OF FILM MAGIC

• **spring 1985**

I BYZANTIUM

II ECONOMIC INTERDEPENDENCE

III SILKWORMS

- **autumn 1985**

I SHARKS

II ART REPAIRS HIGH TECH STYLE

III POPULATION: WILL AD 2000 MARK THE TURNING POINT?

- **spring 1986**

I WINSTON CHURCHILL

II THE OXFORD VOTE - A DON'S VIEW

III AMERICAN LANDSCAPES AND SEASCAPES: FOLK ART

- **autumn 1986**

I THE TUDOR AGE

II CANADA - AN EXPATRIATE'S VIEW

III GLOBAL PERSUADERS

- **spring 1987**

I THE LANGUAGE OF POLITICS

II THE CLIMATE OF TASTE IN THE OLD SOUTH

III A NEW CHALLENGE FOR DAME JENNIFER JENKINS

- **autumn 1987**

I THE WILSON BROTHERS: HUNGER-STRIKING FOR A THEATRE

II KENYON COLLEGE AND WOMEN'S STUDIES

III BRIAN BOTTOMLEY

- **spring 1988**

I PROBLEMS AND SOLUTIONS

II GOING TO THE PICTURES IN THE OLD DAYS

- **autumn 1988**

I THE KEYBOARD GENERATION

II THE GREAT LONDON SMOG

III A DAY WITH MRS EDWINA CURRIE

- **spring 1989**

I CLOSE TO MICHAEL JACKSON

II TELEVISION CENSORSHIP?

III THE MOUNTBATTENS

- **autumn 1989**

I NO PUSHOVER

II HIGH-DEFINITION TELEVISION

III CONTEMPORARY INDIAN ART AND ARCHITECTURE

- **spring 1990**

I ATTLEE: THE UNKNOWN PRIME MINISTER

II MARKET TOWNS



- **autumn 1990**

I WHATEVER THE WEATHER  
II UNNATURAL SELECTION?

- **spring 1991**

I THEODOR DREISER  
II EDUCATION WITHOUT DOGMA

- **autumn 1991**

I NOT JUST AN OBSERVER OF THE SCENE  
II WRITER'S CLAMP

- **spring 1992**

I TAKING SIDES  
II TRUTHS ABOUT THE INCAS

- **autumn 1992**

I OF MAIZE AND MEAT  
II A BRILLIANT NAVIGATOR

- **spring 1993**

Ia HOMING IN ON THE CLASSICS  
Ib THE END OF HISTORY?

- **autumn 1993**

Ia BERTRAND RUSSELL: THE ARISTOCRATIC REBEL  
Ib DOCTORS KNOW BEST: IS IT FACT OR FANTASY?

- **spring 1994**

Ia ROBOTS BELOW  
Ib THE NORMAN ROCKWELL LEGEND  
II THE CULT OF ETHNICITY, GOOD AND BAD

- **autumn 1994**

Ia WHICH WAY BRITISH ECONOMY?  
Ib QUEUE AT THE TOP OF THE WORLD  
II TRAVELLERS

- **spring 1995**

Ia THREE CHEERS FOR TECHNOLOGY - MAYBE  
Ib TREACHERY ISLANDS  
II FEEDING FUNDAMENTALISM

**Appendix 2. THE TITLES OF B-LEVEL TEXTS FROM SPRING  
1982 TO SPRING 1995**

• **spring 1982**

I (no title)

II (no title)

III (no title)

• **autumn 1982**

I (no title)

II (no title)

• **spring 1983**

I (no title)

• **autumn 1983**

I THE MYSTERY OF MOODS

II THE LOBENSTINE FAMILY INN

• **spring 1984**

I CLOTHES FOR THE SOCIAL CLIMBER

II LIONS UNDER OBSERVATION

III THE COLLEGES OF OXFORD UNIVERSITY

• **autumn 1984**

I THE MASTER OF FILM MAGIC

II WILL IT REALLY RAIN TOMORROW?

III UNNATURAL BEHAVIOUR IN THE LABORATORY

• **spring 1985**

I SILKWORMS

II EDUCATING THE AWKWARD SQUAD

III AMERICAN CULTURE NOW

• **autumn 1985**

I THE TIME WE WASTE SAVING TIME

II HOW THE GIVEAWAY PAPERS ARE EARNING RESPECT  
AND MONEY

III SHARKS

• **spring 1986**

I SAFETY NET FAILS

II SHY GIANTS OF THE HILLS

III AMERICAN LANDSCAPES AND SEASCAPES: FOLK ART

- **autumn 1986**

- I GLOBAL PERSUADERS
- II REMINISCENCES
- III CYPRUS: A NATION DIVIDED

- **spring 1987**

- I A NEW CHALLENGE FOR DAME JENNIFER JENKINS
- II BECKETT
- III GOODBYE, DR. SPOCK

- **autumn 1987**

- I BRIAN BOTTOMLEY
- II WOMEN ARE UNNECESSARY: AN ACCOUNT OF GREEK IDEOLOGY
- III STEPHEN SONDHEIM

- **spring 1988**

- I GOING TO THE PICTURES IN THE OLD DAYS
- II PRIVATE LIFE OF THE CHIMPANZEE

- **autumn 1988**

- I THE KEYBOARD GENERATION
- II JAMES BOND
- III PUBLISHING NOW

- **spring 1989**

- I CLOSE TO MICHAEL JACKSON
- II HELICOPTER RESCUE 20 ITSELF REPORTING...
- III TUNA AND THEIR HUNTERS

- **autumn 1989**

- I NO PUSHOVER
- II HOME THOUGHTS FROM MONTE CARLO
- III INFINITE ENERGY

- **spring 1990**

- I LET THE FOREST BURN
- II MARKET TOWNS

- **autumn 1990**

- I WHATEVER THE WEATHER
- II BUTTERFLY HOUSE

- **spring 1991**

- I THEODOR DREISER
- II MODEL MINORITY?

- **autumn 1991**

I AN INTERVIEW WITH WILLIAM GLASSER  
 II NOT JUST AN OBSERVER OF THE SCENE

- **spring 1992**

I THREE POUNDS' WORTH OF PLAYFUL HELL  
 II TRUTHS ABOUT THE INCAS

- **autumn 1992**

I NEW JAPANESE GALLERIES  
 II OF MAIZE AND MEAT

- **spring 1993**

Ia HOMING IN ON THE CLASSICS  
 Ib BBC COUP

- **autumn 1993**

Ia BERTRAND RUSSELL: THE ARISTOCRATIC REBEL  
 Ib WODEHOUSE

- **spring 1994**

Ia HOG-HEAVEN IN BREWTOWN  
 Ib THE NORMAN ROCKWELL LEGEND  
 II THE CULT OF ETHNICITY, GOOD AND BAD

- **autumn 1994**

Ia LAUGHING BOYS  
 Ib THE JOURNEY THROUGH SPACE  
 II BETTER MAKE THAT A HALF

- **spring 1995**

Ia A PRESSURE GROUP THAT'S WILLING AND VERY ABLE  
 Ib GRAVE DIGS  
 II FEEDING FUNDAMENTALISM

**Appendix 3. THE AVERAGE PROPORTIONS OF RIGHT ANSWERS IN THE A-LEVEL TESTS BY TEXT, BY TEST, AND BY YEAR 1980-1990 LISTED IN AN INCREASING LEVEL OF DIFFICULTY**

The average proportions of right answers from autumns 1981, 1982 and 1983 are not available.

(s. = spring, a. = autumn)

The average proportions of right answers by text:

1. s. 87: I 80.70%	24. a. 85: II 67.94%
2. s. 88: I 80.62%	25. s. 85: II 67.58%
3. s. 83: II 79.89%	26. a. 86: I 67.48%
4. s. 82: I 79.80%	27. s. 85: I 66.47%
5. s. 90: II 78.91%	28. a. 84: III 65.94%
6. s. 87: II 78.89%	29. s. 89: II 65.85%
7. s. 82: II 78.30%	30. a. 90: I 65.77%
8. s. 89: I 77.39%	31. s. 90: I 65.02%
9. a. 85: I 77.28%	32. a. 88: II 64.98%
10. a. 88: I 76.99%	33. a. 89: II 62.31%
11. s. 86: I 76.35%	34. s. 86: II 62.17%
12. s. 88: II 75.43%	35. a. 84: II 61.49%
13. s. 84: I 75.32%	36. s. 80: I 61.41%
14. s. 83: I 74.71%	37. a. 86: III 60.13%
15. s. 81: I 74.66%	38. a. 90: II 59.80%
16. s. 84: II 74.00%	39. a. 80: I 59.18%
17. s. 87: III 73.20%	40. a. 86: II 58.67%
18. s. 89: III 72.77%	41. a. 85: III 56.61%
19. s. 81: II 72.74%	42. a. 88: III 54.35%
20. s. 85: III 71.31%	43. a. 89: I 54.04%
21. a. 84: I 70.82%	44. a. 89: III 51.06%
22. a. 83: I 70.34%	45. a. 83: II 45.51%
23. s. 86: I 68.53%	

**The average proportions of right answers by test:**

<b>1. s. 82 79.05%</b>	<b>11. a. 85 67.28%</b>
<b>2. s. 88 78.03%</b>	<b>12. a. 84 66.08%</b>
<b>3. s. 87 77.60%</b>	<b>13. a. 88 65.44%</b>
<b>4. s. 83 77.30%</b>	<b>14. a. 90 62.79%</b>
<b>5. s. 84 74.66%</b>	<b>15. a. 86 62.09%</b>
<b>6. s. 81 73.70%</b>	<b>16. s. 80 61.41%</b>
<b>7. s. 89 72.00%</b>	<b>17. a. 80 59.18%</b>
<b>8. s. 90 71.97%</b>	<b>18. a. 83 57.93%</b>
<b>9. s. 86 69.02%</b>	<b>19. a. 89 55.80%</b>
<b>10. s. 85 64.45%</b>	

**The average proportions of right answers by year:**

- 1. 1982 79.05 % (results only from spring)**
- 2. 1987 77.60% (results only from spring)**
- 3. 1981 73.70% (results only from spring)**
- 4. 1988 71.74%**
- 5. 1984 70.37%**
- 6. 1985 67.87%**
- 7. 1983 67.62%**
- 8. 1990 67.38%**
- 9. 1986 65.56%**
- 10. 1989 63.90%**
- 11. 1980 60.30%**

**Appendix 4. THE AVERAGE PROPORTIONS OF RIGHT ANSWERS IN THE B-LEVEL TESTS BY TEXT, BY TEST, AND BY YEAR 1982-1990 LISTED IN AN INCREASING LEVEL OF DIFFICULTY**

The average proportions of right answers from autumns 1982 and 1983 are not available.

(s. = spring, a. = autumn)

The average proportions of right answers by text:

1. s. 90: II 89.47%	21. s. 85: I 70.34%
2. s. 90: I 86.56%	22. a. 83: I 70.21%
3. s. 86: II 84.42%	23. s. 87: I 69.96%
4. s. 82: II 78.56%	24. a. 83: II 69.07%
5. s. 83: I 77.69%	25. s. 86: I 68.45%
6. s. 89: II 77.56%	26. a. 89: II 67.36%
7. s. 84: II 77.33%	27. s. 87: III 67.05%
8. s. 82: I 76.25%	28. a. 86: II 65.97%
9. s. 89: I 76.16%	29. a. 85: II 65.13%
10. s. 88: II 75.82%	30. s. 85: III 64.97%
11. s. 85: II 75.62%	31. s. 84: III 64.84%
12. a. 85: I 75.54%	32. a. 90: I 63.96%
13. s. 86: III 74.88%	33. a. 84: I 62.11%
14. s. 88: I 73.93%	34. a. 88: II 61.92%
15. s. 89: III 73.72%	35. a. 86: I 60.52%
16. s. 84: I 73.63%	36. a. 84: III 60.49%
17. a. 88: I 72.58%	37. a. 84: II 59.63%
18. a. 85: III 71.53%	38. a. 89: III 59.47%
19. s. 87: II 71.22%	39. a. 88: III 56.28%
19. s. 82: III 71.22%	40. a. 89: I 51.42%
20. a. 90: II 70.88%	41. a. 86: III 43.86%

**The average proportions of right answers by test:**

<b>1. s. 90</b> 88.02%	<b>9. s. 85</b> 70.31%
<b>2. s. 83</b> 77.69%	<b>10. a. 83</b> 69.64%
<b>3. s. 86</b> 75.92%	<b>11. s. 87</b> 69.41%
<b>4. s. 89</b> 75.81%	<b>12. a. 90</b> 67.42%
<b>5. s. 82</b> 75.34%	<b>13. a. 88</b> 63.59%
<b>6. s. 88</b> 74.88%	<b>14. a. 84</b> 60.74%
<b>7. s. 84</b> 71.93%	<b>15. a. 89</b> 59.42%
<b>8. a. 85</b> 70.73%	<b>16. a. 86</b> 56.78%

**The average proportions of right answers by year:**

- 1. 1990** 77.72%
- 2. 1982** 75.34% (results only from spring)
- 3. 1983** 73.67%
- 4. 1985** 70.52%
- 5. 1987** 69.41% (results only from spring)
- 6. 1988** 69.24%
- 7. 1989** 67.62%
- 8. 1986** 66.35%
- 9. 1984** 66.33%