CHAPTER SIX

Reading and Everyday Conceptions of Knowledge

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Introduction

The written word is a powerful strategy for communicating. As Olson (1977) has observed, the introduction of writing systems has had important consequences historically, both for cultural practices in Western society and for the cognitive processes of individuals. In its capacity to store segments of the collective experiences of a people or a culture, the written word puts a premium on a different set of cognitive activities than does the spoken word. "The documented statement", Havelock has argued, "persisting through time unchanged, [releases] the human brain from certain formidable burdens of memorization while releasing the energies available for conceptual thought" (Havelock, 1963, p. 60). Thus as a cultural and technological device the written word has had significant consequences for the development of scientific, abstract thinking, for the mode in which the knowledge which has been accumulated is passed on from one generation to another, and, consequently, for the development of society at large.

A basic notion underlying the research reported in this book is that our capacity to understand and master learning phenomena is intimately linked to our ability to talk about this only vaguely defined concept in a precise way. A vital ingredient in our research activities has been to consider "the actor's definition of the situation" (Dale, 1973, p. 179) as worthy of scientific inquiry and to recognise that human action does not take place in a social vacuum, nor is there one universally best or most basic way of construing reality – of "world-making", as Goodman (1978) puts it. This excursion into the fascinating topic of how people make sense of what they read is therefore to be conceived not merely as an inquiry into human capacity for learning in a narrow sense, but also into fundamental processes of knowledge-generation and mediation in a complex and dynamic cultural and scientific milieu where a multitude of – sometimes competing – conceptions of reality (Marton, 1981) can be found.

Reading and Learning

The vital role played by the written word in our society is a strong reminder of the fact that the ability to read cannot be adequately considered as a mere technical skill denoting the ability to decipher strings of letters on a page (see Edfeldt, 1981 and Gibson and Levin, 1975 for an analysis of the nature of the reading process). A core feature of much of the reading that is carried out in academic contexts is that individuals are required to see something in the outside world – be it the structure of physical objects, an historical development resulting in major social changes, or evolution – in a perspective which is not a familiar part of everyday

thinking. Consequently in the kind of reading that we do as students in order to learn, our present understanding of the world around us is often challenged, and this, we suggest, causes problems that have considerable pedagogical significance.

From the technical point of view, the Gutenbergian invention of book printing was a rather limited step; from the cultural and social point of view it must be understood as representing an immense leap forward, making it possible for a writer or scientist to share ideas and findings with a large number of anonymous communication partners with whom he or she had never had – nor perhaps ever would have – any personal contact. Viewed in this perspective the written document, so much a part of university and college life today, is really a quite specific form of communication placing a particular set of demands on the reader in terms of the attitudes and intentions with which it is approached.

As a preliminary to studying the phenomenon of learning through reading, it is necessary to recognise that the kind of reading undertaken in universities and many other educational contexts is in certain important respects different from the kind of reading (of a novel, for example, or a daily newspaper) which typifies other contexts. A very obvious difference is that in the latter case we select what and when to read, while in the educational context freedom of choice is constrained. Students normally have to read the literature specified in course requirements, and they generally do so at a time and in an order specified in the curriculum. This means that while reading in the everyday context of the novel or newspaper reflects a choice to engage in that particular kind of activity at that particular point in time, the reading that we do to fulfil the demands of the educational system is often carried out with a different set of initial commitments on the part of the reader.

Expressed differently, what varies between contexts in which reading is done are the *premises for communication* (Rommetveit, 1974) that guide our way of making sense of what we read. When trying to understand how students approach the task of learning through reading, it must not be assumed that reading done in different contexts constitutes one and the same cognitive activity; that it can be reduced to a single, basic model of information processing characteristics of individuals irrespective of their intentions and the situations which they encounter. At the very least great caution must be exercised in making this an initial assumption if the concern of the research lies in revealing what the act of learning through reading is like to the individual reader. Indeed, as will be shown in this and subsequent chapters, there are good grounds for striving towards "thick descriptions" (Geertz, 1973) of learning, i.e. descriptions which reveal the meaning of human thinking and acting "when these are no longer defined in isolation, but rather... infused with the demands and traditions of the socially and culturally defined networks in which they exist" (Säljö, 1982, p. 47).

In one sense it might appear unnecessarily thorough to delve into problems of reading in a book which has the explicit aim of dealing with teaching and learning at university. Surely we can assume that students at this advanced level of the educational system can read in a sufficiently skilled way as to be able to cope with their textbooks? However, we do not merely expect students to read, we also expect them to gain something from their reading, i.e. we expect them to increase

their knowledge of the world and their competence in understanding and handling various aspects of reality. This demand for learning through reading can be seen as adding yet another layer of difficulty to the process of reading, and it imposes criteria and restrictions which are different from those that apply to other kinds of reading that we do. The pedagogical context often – although by no means always – contains rather severe restrictions on the kind of interpretation of a particular piece of writing that is relevant or 'correct' *in that particular situation of teaching and learning*. In 'private' reading the demands for a 'common' interpretation of a text may be less meaningful, although it is quite easy to find instances where only one interpretation might be relevant, e.g. in the case of a brochure containing directions for mending or assembling an object.

In summary, then, when reading to learn students are expected to develop cognitive activities which enable them to accomplish something more complex than is generally assumed. Reading, as considered here, is a strategy for taking part in ways of conceptualising the world that are frequently abstract and unrelated to everyday experiences in any obvious way. This poses a central problem for contemporary education. Many of the insights and statements encountered in text-books, even those encapsulated in a brief passage or two, may be the product of centuries of discussion and reflection. This should alert us to the enormous intellectual investment which underpins our present conceptualisations of the world. In investigating how students learn from reading, we are thus not merely studying the mastery of a particular technique of communication. Our inquiries concern how insights and alternative 'versions of the world' are reproduced and mediated to large groups of students under the particular premises for communication characteristic of educational institutions.

Outline of the Empirical Study

The empirical study from which the findings to be reported here derive (see Säljö, 1982), was designed to continue the inquiries into the processes and outcomes of learning described in Chapters 2 and 3. Again the work can be characterised as taking place in what Reichenbach (1938) refers to as a 'context of discovery', the object of inquiry being a more detailed understanding of how students make sense of what they read.

The study comprised five main parts:

(i)   An initial interview concerning the participants' usual methods and habits of study, their conceptions of phenomena such as learning, knowledge, etc.

(ii)   The reading of a text which served as learning material.

(iii)   An interview session during which the participants were asked to:
    (a)   summarise the main point of the text;
    (b)   give a free recall of the text;
    (c)   answer questions on how they set about reading and learning in this particular situation;
    (d)   answer a set of questions on the content of the text.

(iv)   A discussion of the experience of learning in this controlled situation as compared to real life.

(v)   Finally, the participants took two standardised tests, a vocabulary test and Raven's Progressive Matrices.

Each session was run individually with each participant. All communication during phases (i), (iii) and (iv) was tape-recorded. The tapes were later transcribed and the transcripts then served as the data-base for the analysis. No time-limits were imposed during any of the various phases, with the exception of the vocabulary test.

In total 90 participants took part in the study. They were recruited by telephone, and the names of prospective candidates were taken at random from the registers of various educational institutions. The 90 participants represented a much wider variation in terms of age and level of formal education than in earlier Gothenburg studies. Their level of formal education fell into one of three broad groups: short (6 - 9 years), intermediate (12 years), and high (at least 14 years of education, i.e. this group had at least two years of successful studies at the university behind them). The youngest participant was 15 and the oldest 73 years of age.

Broadly speaking, the rationale underlying the selection of participants was to match 'conventional' students at the three levels of formal education to adult students with comparable educational experiences. Thus, the three groups of adult students were not only older than their 'conventional' counterparts but had also had extensive experience of work outside school. Common to all participants was that, at the time when the study was carried out, they were taking part in some kind of education or were just about to start doing so.

In view of the complexity of the empirical material and of our specific concern with understanding how people make sense of what they read, the present discussion will make use of six participants as *exemplars*, demonstrating the major patterns which emerged from the analysis. The function of the exemplars is thus to provide concrete illustrations of ways of 'reading' the text which were characteristic of the entire group of participants, and which can be seen as indicative of significant differences in approach and outcome. The criteria which are valid in judging the merits of this task of discovery differ from those that apply to the (equally important) task of verifying the existence of the patterns and relationships described (cf. Glaser and Strauss, 1967).

The six exemplars were also chosen so as to represent the variation in age and level of formal education characteristic of the entire group of participants, as indicated in the following summary:

- Suzy was 43 years old and just about to start her studies at a college of adult education after having been a housewife for the past 12 years. The subjects she had chosen were Swedish, English, History and Civics. Her previous educational experience consisted of 8 years of first-level education, which she had finished at the age of 15, and occasional evening courses run by a voluntary educational association.
- Sean, aged 16, had just finished basic comprehensive school and had begun his studies at upper-secondary school.
- Stan, 47 and a primary school teacher, was a university student at the

time of the study. He had almost completed his degree in Swedish Literature and English, and he held a diploma of the Institute of Printing.
- Dick, 16 years of age, had recently finished basic comprehensive school and had started his studies at upper-secondary school.
- Dora was just about to commence her first term at university at the age of 38. She had trained initially as a laboratory assistant, but for more than 10 years she had been a housewife.
- Dave, a university student, aged 23, was just about to qualify for the award of his first degree. His studies included Russian, Economics and Political Science. Since the age of seven, Dave had spent only one year outside the educational system, working in a bank.

The text which the participants were asked to read is 3,750 words in length, and is divided into three sections, without sub-headings. The first section (850 words) deals with the phenomenon of classical conditioning and starts with an example of how, as a result of being tortured, a prisoner has been conditioned to respond with convulsions at the mere sight of the pair of electrodes which have been used to torture him. Following this, the basic principles and terminology of classical conditioning, which the example illustrates, are described. The second part of the text (550 words) contains a corresponding presentation of instrumental conditioning. Besides briefly introducing the basic principles (the idea of reinforcement as a means of controlling behaviour, punishment, shaping) the name of Skinner is mentioned and his Skinner-box is explained.

The rest of the text deals with learning through language and mainly contains a presentation of some findings from our own previous research. First an attempt is made to introduce the idea of qualitative differences in approach to learning in terms of the distinction between a deep and a surface approach. This is followed by a presentation of qualitative differences in the outcome of learning which are related to these differences in approach. This is done by means of an example illustrating how different people recalled a passage in a text, some focusing on conclusions while others focused on reproducing the text as such or on the superficial mention of various parts of it (as has been described in Chapters 2 and 3). The text thus had a clear pedagogical intention and the general mode of presenting results and knowledge from scientific studies corresponds to what can be found in many other texts having similar aims (the text is a chapter from a book of readings in psychology used at upper-secondary school). Several examples are used to illustrate and back up the general statements made and principles presented.

Findings

As a preliminary to discussing the kind of text which has been used here as an object of learning, it is essential to make a distinction between the information it contains and the messages it is intended to convey. Thus, in addition to presenting information such as names, technical terms, descriptions of famous experiments, etc., the text is obviously written, to use Rommetveit's (1974) phrase, "to make

something known" about learning. What it intends to make known about learning can be described at different levels of generality. For instance, at the most general level the text has been written so as to provide some kind of map in terms of which learning processes and events can be understood. However, within the text there are also many statements which have an obvious message character, i.e. they make something known about learning without necessarily providing any new information of a more specific kind. The fundamental nature of this distinction between messages and information when considering this text as a means of communication will become evident below.

Since the text introduces the field of learning as an area of scientific inquiry, it also aims to introduce basic technical terms such as conditioning and stimulus, and to show the reader how different everyday behaviours and processes can be interpreted. As an aid to understanding, the author employs various techniques such as simplification and analogy to adapt the content as well as the linguistic form to the assumed interests and preconceived notions of his readers. The text opens with a rather dramatic scene from a Greek prison where a man is being tortured with electrodes. After having been exposed to this torture for some time, the prisoner has only to see the electrodes and he responds with convulsions. Following this example, it is pointed out that what the prisoner has been going through can be described as an instance of learning, and an explanation is then given of how the illustration can be explained within the framework of learning. The following excerpt is the very beginning of the text:

> On the same day they applied the electrodes in a new way. Instead of placing them in the usual way, behind my ears, they rubbed them over my whole body—my arms, legs, everywhere. It felt like having a drill-bit in me, drilling in until you feel like you're going to fall apart. It was like being in the middle of a whirlwind, you feel like a piece of straw in a threshing machine. One of the leather straps broke and so they quit. I was very afraid. One of them listened to my heart. He said something to me, but I couldn't understand. Then they put me on a stretcher. I couldn't collect myself. I couldn't think about anything. Lethargy.
>
> I don't remember if it was Karagounakis who came in afterwards, I only remember the stretcher and the leather bench, of course. New preparations. This time I had the feeling that everything was electrified. I got a shock as soon as I saw the electrodes, even before they had touched me with them. The man who held me was surprised. He only moved it in front of my eyes and I felt the current the whole time. He moved the electrode behind my head, where I couldn't see it; then I felt no electric current. Then he touched the back of my head slightly with the electrode and I jerked. The others came nearer to watch. They tried with the electrode from different angles. It made no difference where they put it, as soon as it came into my field of vision I felt the current. That day they didn't ask any more questions. They laid me on the stretcher and took me back to my room . . .
>
> This example from a very unsettling event in one of the Greek military junta's torture chambers at the close of the 60s describes one form of

> learning in a dramatic way. Normally we don't feel shocks just from seeing electrodes or electric plugs of various kinds. However, the tortured prisoner in the example above had been exposed to experiences which caused him to react in a way quite unlike what he would have done had he never been tortured with electric current. We can say that this new reaction was learned.
>
> This form of learning is called CLASSICAL CONDITIONING. Contact with the charged electrode (is the unconditioned stimulus).

In looking at how the participants dealt with this particular passage, several interesting, and unexpected, observations can be made. Starting with excerpts from the recalls, we can see how Dick, Dora and Dave retold this passage.

> *Dick:* Yes, it starts with a story about conditioning, classical conditioning. They had taken an example there about a man who was being tortured with electrodes and things in a Greek torture-chamber. On several occasions he had been given electric shocks and sort of become afraid of them. After that it was enough for him to see them to feel the electricity pass through his body. He didn't have to get any electricity, it was enough just to see them. But if they took them away so that he didn't see them then he didn't feel any electricity. That was classical conditioning.
>
> *Dora:* First he described what's called classical conditioning. There was a man who had been tortured with electrical ... equipment, and it got the effect that he just had to see these electrodes and then he'd feel the pain ... And this was what they called classical conditioning.
>
> *Dave:* A Greek was being tortured by the Greek junta and this was used as an example of classical conditioning, that is of conditioned responses. The person who was being tortured also got to see the electrodes, which gave the electrical shocks and gradually he sort of felt the electricity in his body just by seeing the electrodes. This I suppose is an example of classical conditioning which was investigated and discovered by Pavlov...

The point here is that it is evident that in these recalls this passage is reconstructed in very much the same way as it was used by the author, i.e. what is brought into focus by the writer through the torture scene is jointly attended to by the reader. Consider now other ways of reconstructing this passage. The following recall of the text is given by Suzy:

> *Suzy:* There was a lot said about Skinner and, for instance, Ivan Pavlov and the psychologist Ebbinghaus and research results. That's always fun to read about. And then all this, there were some statistics about Chile, for instance, and that's interesting and I've always been interested in South America ... and Spain too. And then there was something about the torture methods of the Greek junta and you sort of got bad feelings when you read about that kind of thing, even if it's interesting.

Here the torture passage is mentioned as if it were in itself part of the main theme of the text. There is no indication that Suzy reconstructs the passage as

subordinated to the theme of learning (or classical conditioning), which is the "talked-about state of affairs" (Rommetveit, 1983, p. 16) with which the passage is used by the author. This tendency of not maintaining the 'vertical' relationship in the text typifies the accounts of a substantial proportion of the participants in the study. To borrow an expression from *Gestalt* psychology, what appears problematic is to discern the 'figure-ground relationships' that are used in the text, i.e. the relationships between what is in the forefront of the discussion and that which forms its background.

Another example of how this passage was perceived yields signs of similar problems:

Interviewer: Do you remember the very first example in the text, I mean the example that the whole text started with?

Sean: Yes, it was about torture, a man was being tortured ... under the Greek junta.

Interviewer: Could you tell me a bit about it?

Sean: Well, first ... he was lying on some stretcher, this man. And, how there were people around him exposing him to different kinds of experiments. They had electrodes and touched his body and ... before they had started torturing his body he'd scream. And then they took the electricity and all that behind his head so that he couldn't see when they approached his body... And then they attached them to his skull and ... then they examined his heart and,... yes, well I don't remember anything else. I do remember though that it all ended with their leaving him on his own...

Interviewer: Why was it placed here, this example, do you think?

Sean: Yes, it was to show through violence one can get people to learn other things than what they have learnt before...

Interviewer: What was this an example of, this.

Sean: It was an example of ... how the junta tried to ... Well, it was probably some opponent of the Greek junta and they tried to get him to get rid of ... to forget everything that he had learnt earlier on ... they tried to indoctrinate him ...

Here we can note two features that are interesting from the point of view of knowledge mediation through reading. First, although Sean recounts the torture scene at considerable length and quite accurately, he does not say anything about the process of conditioning which was obviously the reason why the passage had been selected as an appropriate part of the present text. Again from a communication perspective this can be considered as a distortion in the figure-ground relationships of the text. The phenomenon which the author attempts to 'make known' is conditioning (as a variant of learning), and it is this which is the 'figure' and the torture scene from Greece—in spite of its prominence in the text—which is the 'ground'. Sean in his recall, or decoding, reverts this figure-ground pattern, and focuses on the torture scene as if it were itself 'the talked-about state of affairs'.

Second, when Sean, having been prompted by the interviewer, does subordinate this passage to the general theme of learning, he states that it is intended to illustrate how violence can be used to 'teach' someone something against his own will, and that this is a specific form of learning. Now when the excerpt about the prisoner is considered in isolation and not as a part of this particular text, this appears to be a perfectly appropriate mode of recalling it. It <u>can</u> be considered, and used, as a story illustrating how torture is used for political purposes, to brainwash dissidents. In that sense this recall is a reasonable and perfectly coherent mode of retelling this section, but – and this is our point – <u>not</u> *of reconstructing its message within the overall framework of the text*. If the communication situation were to be construed as allowing the reader a free choice in determining what to attend to, and in whatever way was felt to be appropriate, any further discussion on criteria of 'correctness' of interpretations would be futile. However, if we assume that in this particular pedagogical context the power of decision over what is being talked about is asymmetrically distributed (in the sense that the (possible) expansion of the reader's conception of reality relies on his or her temporary subordination to the line of reasoning suggested by the author), then the apparent failure to 'agree on' what is being talked about can be understood as a problematic element in the process of mediating knowledge.

To give another illustration of the problems of establishing intersubjectivity between text and reader, we can take a passage which was an example to illustrate something general. The passage dealt with the difference between a deep and a surface approach to learning, which has been examined in previous chapters of the present book. The example used was about the training of graduate professionals and of sub-professionals in developing countries as compared to industrialised ones. It was pointed out that in developing countries, this proportion is often very unfavourable, while in the industrialised countries it is much better (meaning a higher proportion of sub-professionals to professionals). The countries used as illustrations were, on the one hand, Chile, and on the other the USA and Sweden, and the occupational groups used as concrete examples for the comparisons were doctors and nurses.

Neither Suzy nor Stan relates this passage to the topic of learning. What is said about Chile is treated as if it formed a part of the main theme of the text itself, and not as if it were a means to concretise differences in the outcome of learning.

Suzy: And then all this, there were some statistics about Chile, for instance, and that's interesting and I've always been interested in South America... and Spain too..

Stan: There were examples from the situation in Chile, where there were three doctors to one nurse or something like that, from a Swedish point of view a very bad proportion and even more so compared to America where there were seven nurses for every doctor, I think. That's the kind of picture that I very vaguely have. I mean, its the same impression that you get from reading the newspapers, for instance, about how things are in the underdeveloped countries.

By contrast, Dora and Dave clearly perceive that the information about the education of doctors and nurses in different countries has the status of an example.

Dora: Then there was a discussion about the value of different kinds of learning and well, there were other students who had to read another text and they also had to relate this text. It was a text which examined the working relationship between professionals and sub-professionals.

Dave: Here they account for yet another example of experiments on how a text was read. They had read about this relationship, that qualified professionals need a large number of special assistants to be able to function properly and there was an example of doctors versus nurses. Thus, a doctor should ideally have a greater number of nurses than the other way around. And then they had seen what these persons got out of this text and...

This contrast between the two groups of exemplars was again apparent at a later stage in the interviews, when participants were specifically asked why this particular example had been introduced. The responses given by Dick, Dora and Dave provide further confirmation that they have grasped the illustrative function of the example. Suzy, however, states that she does not know why this example was placed in the text, while Sean again assumes that the information given was an integrated part of the text's main theme. He appears to have interpreted the text as dealing with classical conditioning, instrumental conditioning, learning through language and the education of professionals and sub-professionals in various countries.

Sean: It depends on when it's written... If it's written before '73 or ... before the fall of Allende in Chile or ...

Interviewer: Oh, well, it's older than that . . .

Sean: It's older ... well, then I think they want to show ... how well Chile has been developing and how the development has been in comparison to these other countries.

Stan, on the other hand, perceives that this passage has the role of an example, but he is completely mistaken about what it exemplifies.

Stan: Yes, in that context it should probably have some ... be associated with some kind of behaviour, ... type of behaviour. The behaviour of different countries or ...

To sum up at this point, what has been seen can be described as different ways of making sense of two segments of this particular text. Yet the difference between the two groups of exemplars is less a question of what is understood and remembered than of the extent to which what the author attempts to make known is reconstructed. Suzy, Sean and Stan do not seem to have any difficulties in understanding the two passages *per se*. Rather what appears problematic, it seems, is to discern and to attend to the particular aspects of these illustrations that are relevant to the line of reasoning adopted by the author.

Suzy, Sean and Stan seem to have adopted what Svensson (see Chapter 4) calls an *atomistic* approach. In consequence, in terms of the figure-ground analogy they seem to construe figures that are only partially related to the ones suggested by the author. However, and this seems important, their ways of making sense of these paragraphs are not wrong in any absolute sense and do not violate basic rules of language use. Nor is it reasonable to assume that general intellectual deficits would make it impossible for Suzy, Sean and Stan to reconstruct the messages as intended. (Indeed it should be noted that the performances of Suzy and Stan on the Vocabulary Test were far superior to that of Dick.) Our search for an adequate interpretative framework must instead focus on the assumptions held by these readers/learners about the nature and purposes of this task and the criteria of understanding relevant to this particular situation. Before attempting this, however, let us comment on some other findings indicating differences in how the exemplars made sense of what they had been reading.

In continuing our search for the nature of the inter-subjectivity established between the reader and the text, we shall add some observations from two other sources that reveal interesting differences. The first source was a very open and non-directive question asking participants to give their general reaction to the text. It was phrased as "Well, what did you think of this text?". A striking difference is once again apparent. Consider first the accounts given by Suzy, Sean and Stan.

Suzy: Well, I really think one should have had more time on it. 'Cos after all one gets a bit distracted and I find it difficult to concentrate on reading.

Sean: I think that ... what was said at the beginning about different methods of learning was rather interesting. To see how ... that there are very different ... many different methods for learning things.

Stan: Well, I found it very interesting.

Interviewer: In what way?

Stan: Because I'm rather keen on that sort of thing and the arguments presented. Maybe it's an illusion, but I think you learn something from such things... You sort of learn. At the end there were also such nice comments about deep structure and surface structure. Such things fascinate me very much.

These excerpts contain general reactions to the test as a learning task and some comments about how interesting it was found to be. Dick, Dora and Dave also comment on their interest in the text, but add a very specific remark.

Dick: Well it tied in with the questions we discussed earlier, sort of. Why some people find it easier to learn and remember, and how you remember things and so on.

Dora: Well, it is about the very same thing that we're doing right now... That's what's so funny about it, I think.

Interviewer: Yes... How do you mean . . . ?

Dora: Well, I mean what we talked about earlier, it relates very closely to what I was saying . . . It all comes back here in this.

Dave: It was interesting. We had just been sitting here talking about learning and of course I thought about that. What was said corresponded to a certain degree with the ideas I had and it was interesting to get it confirmed all this about the activity and so on and thinking independently. That's what I also said is the most important thing about learning, that you should be able to apply it in a wider context and not just churn it out by heart.

What is added in these comments is an explicit recognition that the text deals with the very same situation as was discussed in the initial interview. These participants, in contrast to their counterparts above, thus spontaneously react by pointing to the thematic continuity between two different instances of communication, the interview and the text. Furthermore, throughout the continued questioning they compare what they themselves had said about learning with what was said in the text. A striking difference between the two groups of participants thus concerns to what extent the content of the text has been explicitly seen *as offering the possibility of changing (or confirming) the conception of learning that the individual brought to the situation in relation to the conception presented in the text.* According to the view of human learning introduced earlier in this volume and described as characterised by changes in conceptions of reality, it is, we would hold, *precisely in such encounters between different conceptions of the same phenomenon, or between different 'versions of the world', that new insights may result, i.e. that learning can occur.*

The second source of data to be commented upon here derives from the concluding interview, where the participants were encouraged to report on the associations they had been making while reading and to explain to what extent and in what way the text had reminded them of things they had experienced or read about. Here too clear differences between the two groups can be discerned. Dick, Dora and Dave constantly talk in terms of the overarching theme of learning and the various scientific investigations and experiments they refer to are always explicitly accounted for as illustrations of learning. They also explicitly and spontaneously make comments which indicate an active attempt to identify the 'talked about state of affairs', as is illustrated by Dave:

Interviewer: Can you describe how you went about reading the article?

Dave: I didn't look the article over first, instead I started reading it straightaway, something that I don't usually do, usually I'll skim through them rather quickly sort of to see what it's all about... But here I just read the introduction and then I understood what its slant would be... I understood that it would be going to deal with different forms of learning...

Suzy, Sean and Stan, on the other hand, do not seem to be directed towards identifying what the author attempts to make known in the same active way. They have difficulties in identifying and expressing what theme the author addresses, as is exemplified by the following quotation from Suzy.

Interviewer: What did you see as of most importance in the text? What did the person who wrote it want to get across? Could you say that in just a few sentences...

Suzy: Wanted to say? Hm, it's difficult to say really.

Interviewer: Hm, what title do you think you would want to give to this text?

Suzy: What title to give it,... well,... in the introduction there it referred back to the Greek junta. Then there was a lot of research stuff and then there... Well, there were sort of a lot of different things which come in there all the time like ... No, I need to have more time to sort of get . . .

The questioning also yields signs of differences in how the two groups of participants inject meaning into what they read and what kind of associations the text evokes. The statements given by Suzy, Sean and Stan imply that they had been reacting to the text, and to the various parts of it, in a way that was not related to the messages the author intended to convey. They atomise the text and they use the parts which they themselves have singled out as a basis for injecting meaning and for associating. In so doing they miss the intended relationship between parts and 'wholes', and the possibilities of profiting from the insights offered by the author are, we would assume, impaired.

Reading with the Intention of Learning

In accordance with the logic of research adopted in this volume, our search for an interpretative framework encompassing differences in how the participants made sense of this particular text should focus on possible *internal relationships* between approach and outcome (cf. Marton and Svensson, 1979). In other words, in functional terms, it should focus on what the participants were doing in this particular communication situation, and the assumptions they held about it.

As will have been evident to the reader, the two groups of participants focused on here were selected since their approach to learning could be identified as instances of a deep (Dick, Dora and Dave) or a surface (Suzy, Sean and Stan) approach. The latter display indications of what has been described in Chapter 3 as a surface approach (an orientation towards memorising, focusing on the text *per se* rather than what the text is about, etc.). But a further salient difference was found to reside in their *conceptions of knowledge and learning*. These differences in conception, as we saw in Chapter 3, are linked to differences in approach. Thus Dave Dick and Dora see knowledge as offering an improved understanding of reality through the abstraction of meaning, while for Sean, Stan and Suzy on the other hand, knowledge is equated with 'information' or 'facts' which are learned through memorisation (Säljö, 1982, pp. 76 - 91). How then can the relationship between approach and conception help us to understand how the text is apprehended by Sean, Stan and Suzy?

The point we wish to make is that this subjectively coherent picture of what knowledge is and how one learns *serves as a premiss for, and a limitation upon, the sense-making activities assumed to be appropriate when approaching a*

discourse with the intention of learning. If this conclusion is valid, the major learning problem in this instance is that a surface approach seems to imply that the text is not decoded on the premises on which it was written, and the reader, in his or her role as learner, does not seem to be directed towards reconstructing its messages. In this sense, a surface approach implies a violation of the fundamental rule of role-taking summarised by Rommetveit (1983) when analysing dyadic interaction in terms of the "constellation of the speaker's privilege and the listener's commitment" (p. 16). In the present case the privilege of deciding what is brought into focus in the dialogue between text and reader lies with the text (and its author) and the commitment or responsibility to determine what is being meant lies with the reader.

In comparison to oral communication the written discourse thus implies a different distribution of responsibility for controlling the progress of the 'dialogue'. Once writers have encoded their message, it leaves their charge: reconstructing what is made known is at the discretion of their readers. This means that even in cases where messages are interpreted as running counter to what the readers themselves happen to know or assume, the reader must—in one way or another—provisionally accept the line of reasoning followed by the author while they are reading. Thus, the reader/learner must grant to the writer the active role in directing the dialogue, provisionally accept the premises the writer has introduced, and search for the messages or 'wholes' pointed to by this anonymous communication partner.

At a general level, this seems to be a significant part of the problem which Suzy, Sean and Stan have in reading this kind of text. Since their implicit assumptions of learning and knowledge lead them to focus on 'information' they can see no obvious way of dealing with much of what is said in the text nor with the general line of reasoning developed. In fact, *they act as if they lack what we might call a cognitive category corresponding to a conception of a phenomenon.* This of course does not mean that they did not have any preconceived ideas about the phenomenon of learning prior to the reading of this particular text. What it does mean is that they do not see it as the purpose of the general situation they are in to confront their preconceived assumptions with the ideas presented by the author. For them, changing one's conceptions of reality is not what has come to be associated with the specific task of learning in this kind of context.

Concluding Comments

To recapitulate, it follows from what has been said that the distinction between a deep and surface approach is not meaningful in all contexts. If the distinction is to be useful in analysing how people learn, the learning material should have the same general character as that used in the studies presented in this and in previous chapters, i.e. a text which presents arguments, scientific principles and constructs, and/or is intended to provide a coherent way of explaining or analysing a phenomenon. Should the learning material be of a different kind, (listing, for example, German prepositions which take the accusative case), this distinction might not be at all applicable or enlightening. Learning of this latter kind has very much the character of acquisition of information, and mastery of the task is

probably to a large extent a function of the time and energy one devotes to memorising. The pedagogical problems in such situations are obviously different from those dealt with here.

Instead, the question of what approach a person uses when learning through reading becomes critical when we deal with texts which have a message character. In such instances our research indicates that a surface approach is associated with decisive difficulties in understanding. Furthermore, the conception of the *what* and *how* of learning which underlies this approach makes it rather difficult to deal with the more provisional and conditional types of reasoning which are quite often found in this kind of text ('assuming that A and B are related, we find that the process C can be explained in the following way...'). To a large extent it seems as if the premises underlying this kind of reasoning and the qualifications imposed are disregarded by the students in the learning process, and what are left as appropriate 'targets for learning' are more definite statements shorn of such qualifications and with a more factual appearance (see Säljö, 1982, for a fuller discussion).

A discourse of the kind used in the present study is thus not a list of unambiguous and fixed statements about the world. Instead it can be conceived as a conscious attempt to reorganise current 'versions of the world' and to provide conceptual tools and contexts for understanding that have emerged from scientific experimentation and theorising. From a communication perspective, the text is an invitation to attend to some more or less familiar aspects of reality within a framework that may not be part of our everyday thinking with respect to this class of phenomena. The reader is offered the possibility of expanding his or her current repertoire of 'world-versions' and of adding alternative ones which might never present themselves as a result of day-to-day experiences. However, this is only a potential which is dependent for its realisation on the approach the reader/learner uses.

A conclusion of our examination of learning approaches would thus be the somewhat paradoxical statement that to quite a large extent it is *the intention to learn from the text which leads people to misunderstand it.* When a text is defined as an object of learning this seems to affect how it is made sense of, and prominence is given to *criteria of relevance* which are not those adhered to in other reading situations. The distortions of the 'figure-ground' relationships in the text, the problems encountered in discerning the 'vertical' dimension of the text (the horizontalisation phenomenon), and the more general difficulties in grasping the contextually relevant meanings, are not, we can safely assume, characteristic of how Suzy, Sean and Stan relate to written texts in other contexts. Were this to be a problem characteristic of their reading in general, it could be interpreted as a severe dysfunction. It is our assumption, however, that the crucial process of decoding a text on the premises on which it was written, is the natural mode of acting in everyday reading situations. In such situations, reading is characterised by a *voluntary and self-induced decision to attend to a written discourse in which there is a genuine and momentary desire to find out what is 'made known'.* A basic feature of a deep approach therefore seems to be that this attitude is also maintained in a situation where there may not be such an initial commitment on

the part of the reader, but where the reading is undertaken in response to a request or requirement.

It also follows that we can view students' approaches to learning from texts, and their conceptions of knowledge and learning, as social phenomena that evolve as a response to long exposure to educational situations. There are many factors which might be seen as reinforcing this way of learning: overloaded curricula, forms of assessment requiring the more or less verbatim recall of facts and even the design of text books, which can present knowledge in such a neatly parcelled way that there is scope for little beyond mere memorising. Nevertheless, to suggest that schools may encourage a surface approach is not to level an accusation, for the conception of learning endorsed in schools is modelled on what this concept is commonly assumed to refer to in society at large. A static and factual conception of knowledge is not an invention of schools, as many critics seem to assume; it is a part of common-sense thinking. Without going too deeply into this fascinating topic, the dominance of a factual view of knowledge among teachers and learners can be seen as a consequence of its domination of the larger cultural context of Western everyday thinking, where there is a strong tradition of construing knowledge in absolutistic terms. As Douglas (1971) observes, "Absolutist (non-situational and non-contextual) thought is not the product of some mad scientist. Absolutist thought is a fundamental part of Western thought" (p. 39). What we have referred to as a 'fact' stands as a symbol, unreflective and taken-for-granted, of what knowledge should look like, and it is thus not particularly surprising that educational activities often start from this platform. Nor should we be surprised that students have difficulties when this definition of knowledge is challenged (see Perry, 1970).

But can the conclusion be drawn that a deep approach is more efficient than a surface one? We hope the reader has been able to conclude that this is not necessarily the case given a long tradition in education of what characterises pedagogic situations. A surface approach is obviously a rational approach to the way in which schools "do business" (Becker, Geer and Hughes, 1968). In higher education, however, the demands of learning are in many cases of a different kind, since students have to work much more independently and have to deal with a substantially larger volume of written material. In that setting, a surface approach can be detrimental.

The problems students encounter in reading are thus not merely – as is commonly assumed – efficiency problems, a question of speeding up teaching and learning in a one-dimensional process of fact-gathering. Our literate culture has made possible a conceptual development in which a multitude of 'world-versions' appear and are continually modified. A dynamic conception of knowledge, a commitment to seeing reality from new and previously unfamiliar perspectives, is thus built into the scientific enterprise itself. Though this is self-evident to the trained academic, it may appear as strange and unfamiliar to the student. Coming to terms with it causes pedagogical problems which are bound up with changes in conceptions of reality and the expansion of intellectual repertoires.

Scientific texts offer new 'versions of the world', or fragments of these, and the act of learning through reading may thus be seen as entailing an implicit commitment to transcend assumptions about reality which are firmly grounded in our everyday experiences. In our culture, knowledge deriving from personal experience and therefore 'true' in the everyday realm may have to yield to an alternative mode of conceptualisation which stems from a scientific 'version of the world'. A distinctive feature of collective and individual learning in our scientific mode of thinking is thus an "increasing capacity for emancipation from immediate 'bodily engagement' in ... objects and events" (Rommetveit, 1974, p. 43). This is the process of abstraction and detachment from the world close at hand which writing *per se* has made possible, and which confronts us today with pedagogical problems in our attempts to convey its insights to coming generations.

Acknowledgements