

6 Gradual approximation

What I want to do in this paper is to suggest ways in which we might make use of the learner's existing knowledge and experience in designing language teaching procedures which, by a process of gradual approximation, will guide him towards an ability to handle English discourse. More specifically, I want to consider the case of a learner who needs English for reading textbooks which are necessary for him in following an academic course of study at college level. But I also have a more general purpose. This is to provoke discussion on what I see as a basic problem in language teaching pedagogy: how to reconcile the necessarily contrived nature of teaching procedures with the need to prepare learners for the reality of actual communication.

Language teaching methodology in the past has not been notable for its recognition that learners have knowledge and experience which they can bring to bear on their task in acquiring another language. Often the assumption has been that the teacher is presenting something entirely new and the learner is actively discouraged from associating it with what is already familiar to him by transferring his experience through translation. That is to say, he is not supposed to exercise the normal learning strategy of relating new experience to existing conceptual and behavioural patterns. Thus the techniques of the teacher have sometimes tended to isolate the learner and to put him at one remove from his own experience of language. He makes reference to it surreptitiously all the time, of course, but this natural strategy is not pedagogically sanctioned. This assumption of learner ignorance in fact can result in a representation of language which is at variance with the learner's own concept of what language is and how it operates. He is likely to be presented with language data which serves only the metalinguistic purpose of demonstrating the formal properties of the foreign language system but which has little or no implication of utterance. He is then very commonly required to learn these instances of usage as new information and to manipulate them in detachment from the actual contexts of use which provides the knowledge of the system of his own language with its communicative relevance.

I do not wish to suggest that the teaching of usage should be avoided. Indeed it cannot be avoided. Clearly, the language learner has to acquire

knowledge of the system of the language he is learning: he cannot hope to communicate without a code. But to present it in isolation is in some degree to misrepresent it since in actual language behaviour the system is not simply *manifested* but is *realized* as meaningful communicative activity. The learner knows this well enough as a competent user of his own language. Too exclusive a concern for the peculiarities of the system of the language he is learning, however, allows him little opportunity to bring this knowledge to bear. The teacher in these circumstances is in complete control and knows everything, whereas the learner knows (or is supposed to know) only what the teacher permits him to know: there is a one-way traffic of information directed entirely by the teacher. We have a pedagogy of imposition rather than of participation. My reason for thinking this to be unfortunate is not because I believe that teacher/learner relations should as a matter of principle be based on equality (whatever that may mean), but simply because I believe that a pedagogy that does not involve learner participation is not likely to be as effective as one that does.

In order to ensure participation we need to engage the learner's existing knowledge and experience. I want now to consider how we might bring this about in our teaching of English as a second language to college students who need the language primarily as a reading resource. Let us suppose that we are dealing with students in the first year of tertiary education who have undergone a course of instruction in English in their secondary schools. We will assume that as a result of this exposure they have some knowledge of English grammar and vocabulary and have acquired some ability in manipulating English sentences. They are also likely to have some knowledge relating to their subject of study. And, of course, as competent communicators in their own language they have a good deal of knowledge of how language in general operates in normal contexts of use, though, as I have already intimated, they may not have been encouraged to bring this knowledge to bear on their learning of English. Our task now is to devise teaching procedures which will exploit these different kinds of knowledge in order to extend the learner's experience of language to include a communicative competence in English for his specific study purposes.

I want to propose under the heading of *gradual approximation* a general strategy which I think might help towards achieving these aims. I do not wish to pretend that the exercises I shall suggest are in any way definitive. They are illustrative of a strategy which might serve as a general guide, but they do not preclude the necessity for planning tactical manoeuvres to meet the exigencies of particular situations. Gradual approximation begins by providing exercises within the scope of the learner's (limited) linguistic competence in English and then gradually realizes its communicative potential by making appeal to the other kinds of knowledge that

the learner has. Thus the starting point is the sentence and the end point is discourse, the progress from one to the other being mediated by an integration on the part of the learner of the different kinds of knowledge that I mentioned earlier. We now need to consider an example.

Let us suppose that the following is representative of the kind of discourse which the learners in our charge will ultimately have to deal with in their reading.

Discourse sample

The skin is composed of several layers. There are two basic ones, the *epidermis*, which is the outside layer, and the *corium*, which is the inside layer, but both of these could be further subdivided.

The epidermis is composed of a hard and dry outer layer, which is continually being worn away. The scurf which is found on an animal is composed of the dead cells of this layer. The second layer of the epidermis is moist and deeper and consists of several layers of cells which are used to replace the ones which are worn away. It is this inner layer which possesses the pigment which gives the skin its colour. There are no blood vessels in the epidermis but there are small nerve endings.

The corium is a mixture of fibrous tissue and elastic fibres which allow the skin to stretch but, at the same time, keep it in place. This is the layer of skin which contains the sweat glands, the *sebaceous* glands (or glands producing oil), the *hair follicles*, and a complex system of small blood vessels and nerves which are associated with sensations such as pain, temperature, and touch. In addition it possesses a certain amount of *muscle fibre*.

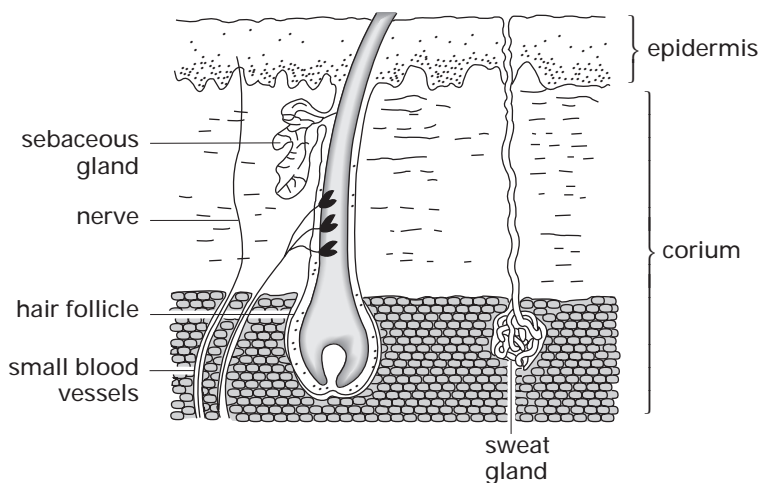
Our task is to bring our learners to the point of being able to respond to passages of this kind in an authentic way. That is to say, we have to make him aware of how English can be put to use, just as his own language is, in the reasoning processes which realize meaning in discourse.

A very general problem we have to try and resolve is that in the normal circumstances of communication people are not suddenly confronted with short passages of prose which they are required to read and comprehend to order. The very presentation of 'reading passages' as such creates abnormal conditions. Reading is not normally a detached activity carried out for its own sake but an integrating activity, as one of the means whereby we adjust our knowledge of the world to incorporate new information. We read to extend what we know and before we begin we assemble our thoughts and project them forward in prediction. We are primed to interact with what we read, to participate in the communicative process. To get the learner to adopt the same approach to his reading, we need to persuade him to participate instead of being imposed upon, to

78 Explorations in Applied Linguistics

prepare him by means of some kind of priming device. One possibility available to us in the present case is to begin by presenting information in the form of a diagram and appealing to the learner's knowledge or interest in the subject matter in disassociation from its linguistic expression in English. Note that a description of the kind we are considering would quite naturally appear in conjunction with a diagram in a textbook (as indeed it does appear in the textbook from which the passage was taken) so that our diagram is not simply a language teaching 'visual aid' but a genuine communicative device in the kind of discourse we are preparing the learner to handle, and which he had perhaps already handled as realized through his mother tongue. In this respect it is a part of the learner's world.

We may begin, then, by presenting the learner with a diagram like the following.



What we now need to do is to devise gradual approximation exercises which will involve the learner in the discovery of how the information presented in the diagram can be expressed verbally in written English discourse of the kind represented by our specimen passage. The first step is for the teacher to decompose this passage into a set of constituent propositions. For example:

Discourse decomposition

- 1 The skin is composed of several layers.
- 2 There are two basic layers in the skin.

- 3 The outside layer of the skin is called the *epidermis*.
 4 The inside layer of the skin is called the *corium*.
 5 The layers can be further subdivided.
 6 The epidermis has an outer layer and an inner layer.
 7 The outer layer of the epidermis is hard and dry.
 8 The outer layer is being continually worn away.
 9 Scurf is composed of the dead cells of the outer layer.
 10 Scurf is found on animals.
 11 The second layer of the epidermis is deeper than the outer layer.
 12 The second layer of the epidermis is moist.
 13 The second layer of the epidermis consists of several layers of cells.
 14 The cells in the second layer of the epidermis are used to replace other cells.
 15 Cells in the outer layer of the epidermis are worn away.
 16 The second layer of the epidermis possesses pigment.
 17 Pigment gives skin its colour.
 18 There are no blood vessels in the epidermis.
 19 There are small nerve endings in the epidermis.
 20 The corium is the inside layer of the skin.
 21 The corium is a mixture of fibrous tissue and elastic fibres.
 22 The elastic fibres allow the skin to stretch.
 23 The elastic fibres keep the skin in place.
 24 The corium contains the sweat glands.
 25 The corium contains the sebaceous glands.
 26 The sebaceous glands produce oil.
 27 The corium contains hair follicles.
 28 The corium contains small blood vessels.
 29 The corium contains nerves.
 30 Small blood vessels and nerves make a complex system.
 31 The nerves are associated with sensations.
 32 Pain, temperature, and touch are sensations.
 33 The corium contains a certain amount of muscle fibre.

The object of this operation is to separate out the different propositions which are contained within the passage and to make them explicit. This involves assigning full lexical value to different proforms and giving independent status to conjoined and embedded sentences. But that is not all: it also involves amendment and addition to the propositional content in order to bridge presuppositional gaps in the original, and to resolve any possible ambiguity. P(roposition) 5 is an example of emendment. The sentence in the original reads: *both of these* (basic layers of skin) *could be subdivided*, which would normally carry the implication that they will not be subdivided—they *could* be but they are not going to be on this particular occasion. But one of them in fact *is* subdivided in the description

80 Explorations in Applied Linguistics

which follows, so the use of *could* is misleading here. Hence the amendment to *can*. The first sentence in the second paragraph of the passage maintains the misleading implication of the last sentence of the first paragraph. The reader is further discouraged from predicting any subdivision by the use of the expression *is composed of* which suggests that the epidermis is going to be described as consisting of only one layer—a hard and dry outer one. In fact, the epidermis is represented as consisting of *two* layers. To make this explicit, we can insert a proposition—P₆—and alter *The epidermis is composed of a hard and dry outer layer* to P₇: *The outer layer of the epidermis is hard and dry*. Just one more example of emendation: the original sentence (*It is*) *this inner layer (which) possesses (the) pigment* is reformulated as P₁₆. This change is made because of the possible confusion between the *inner* layer of the epidermis (itself the outside layer of the skin) and the *inside* layer of the skin, the corium.

Discourse decomposition, then, is a write-out of the propositional content that a reader is required to recover from a passage. Such a procedure focuses the teacher's attention on possible areas of difficulty: where the reader's predictions are not given sufficient support, or where they are misled, or where he needs to infer relations between propositions which are presupposed but not explicitly indicated in the discourse. Once the teacher is made aware of possible difficulties in this way, he can present or exploit the passage accordingly. He may choose, for example, to present a simplified version of the passage by textualizing it with reference to the discourse decomposition. If he prefers to present the passage as it is, the decomposition will serve as a guide to the devising of comprehension exercises. For our present purposes, discourse decomposition is the first step towards devising gradual approximation exercises.

The next step is to select from these propositions a certain number which extend the diagram labels and then to present them as incomplete sentences. We might call this a word to sentence exercise. This is what it might look like:

Word to sentence exercise

Put the correct form of the verb in the blanks: *call, have, contain, be*.

D	epidermis	The outside layer of the skin . . . the epidermis.
I	outer layer	The epidermis . . . an outside layer.
A	inner layer	The epidermis . . . an inner layer.
G	corium	The inside layer of the skin . . . the corium.
R	sweat glands	The corium . . . sweat glands.
A	hair follicles	The corium . . . hair follicles.
M	basic layer	There . . . two basic layers in the skin

Make statements about the following:

sebaceous glands, small blood vessels, and nerves.

This is, of course, a straightforward structure exercise of the traditional kind. It draws upon the learner's existing knowledge of English grammar. But notice that he is not just constructing sentences for their own sake in isolation from a relevant context of use: they are reformulations of information expressed in the labelled diagram and as such are meaningful statements.

The next step is to associate the writing of statements not with information in the diagram but with information which the learner already has as part of his knowledge, or which he will need to acquire as part of his specialist studies. We set him problems that he cannot solve simply by reference to his knowledge of English. An example of the kind of exercise I have in mind might be the following:

Sentence and statement exercise

Combine the expressions in column A with the expressions in column B to form correct statements.

A	B
1 The outer layer of the epidermis	a make a complex system.
2 The second layer of the epidermis	b is a mixture of fibrous tissue and elastic fibres.
3 The cells in the second layer of the epidermis	c keep the skin in place.
4 The corium	d is hard and dry.
5 The elastic fibres	e is moist.
6 The sebaceous glands	f produce oil.
7 Small blood vessels and nerves	g are used to replace other cells.

By reference only to his knowledge of English, the learner can produce a number of correct sentences. Thus, he can combine 4 and d and thereby compose the impeccable sentence *The corium is hard and dry*. Similarly, he can combine 5 with f to produce the correct sentence *The elastic fibres produce oil*. But although there is nothing objectionable to the compositions as *sentences*, they are quite unacceptable as *statements*. The exercise, then, requires the learner to produce correct instances of usage which are at the same time acceptable instances of use as statements of fact. We therefore engage both his knowledge of English and his knowledge of his subject.

In the next stage in the operation we want to move the learner from the making of separate statements towards their incorporation in continuous discourse. To do this we can present the sentences he has composed (adding others from our stock of basic propositions if necessary) in three sets corresponding to the three paragraphs of the original passage, but present both the sets and the sentences within them in random order. The learner is required to arrange and combine the sentences in such a way as to ensure cohesive propositional development through the three

82 Explorations in Applied Linguistics

paragraphs. This will require him to replace lexical material with suitable pro-forms and to use his knowledge of English grammar to produce co-ordinate and subordinate constructions. The exercise is also intended to appeal to his knowledge of how discourse is organized and the assumption is that he will have acquired knowledge of this kind from his experience of how his own language is used. This kind of exercise can (as indeed can the others we have been considering) be controlled for difficulty. For the sake of illustration I will assume that the learner needs to be helped in establishing the propositional content of each paragraph (hence the grouping of sentences into sets), but that he can draw upon his experience of language use in his own language to work out the order of paragraphs and the propositional development within each one. We could, of course, adjust the exercise so that more or less help were provided.

Discourse composition

Put the statements in the following sets in the appropriate order and combine them where necessary to make a paragraph. Then arrange the three paragraphs in the most appropriate order to form a complete passage.

A

- 1 The corium contains sweat glands.
- 2 The corium is the inside layer of the skin.
- 3 The corium contains hair follicles.
- 4 The corium contains sebaceous glands.
- 5 The corium is a mixture of fibrous tissue and elastic fibres.
- 6 The corium contains small blood vessels and nerves.
- 7 The elastic fibres keep the skin in place.
- 8 The sebaceous glands produce oil.
- 9 Small blood vessels and nerves make a complex system.

B

- 1 The outside layer of the skin is called the epidermis.
- 2 The inside layer of the skin is called the corium.
- 3 There are two basic layers in the skin.
- 4 The layers can be further subdivided.

C

- 1 The cells in the second layer of the epidermis are used to replace other cells.
- 2 The second layer of the epidermis is moist.
- 3 The epidermis has an inner layer.
- 4 The epidermis has an outer layer.
- 5 The outer layer of the epidermis is hard and dry.
- 6 The second layer of the epidermis consists of several layers of cells.
- 7 Cells are worn away in the outer layer of the epidermis.

Learners will, of course, produce a number of versions and the relative merits of each can be discussed in class. Such a discussion is probably best carried out in the mother tongue, although this, again, will depend on particular circumstances. The learners might also be encouraged to write translation equivalents of the passage, thus overtly making reference to their knowledge of how language generally operates as use. The idea is that they should have their attention drawn to the effectiveness of the different versions as instances of discourse and they can refer to how their own language is used in communication in making their assessments. The following is one possible version:

Derived discourse

There are two basic layers in the skin. The outside layer is called the epidermis and the inside layer is called the corium. These layers can be further subdivided.

The epidermis has an outer layer and an inner layer. The outer layer is hard and dry whereas the second layer is moist. The second layer consists of several layers of cells. These are used to replace other cells which are worn away in the outer layer.

The corium is the inside layer of the skin. It contains a mixture of fibrous tissue and elastic fibres which keep the skin in place. It also contains sweat glands, hair follicles, sebaceous glands which produce oil, and a complex system of small blood vessels and nerves.

In devising this particular set of gradual approximation exercises I have made use of 21 of the original 33 basic propositions that resulted from discourse decomposition (A6 being a combination of propositions 28 and 29). These carry what I judge to be the main information in the passage. But what of the other propositions? We could, if we wished, present them to the learner and require him to insert them at appropriate points in the discourse he has composed. Alternatively, we might at this stage simply present the learner with the original passage in order to demonstrate how his own discourse can be further elaborated. The former course continues gradual approximation through composition, the latter shifts the emphasis to comprehension.

This reference to composition and comprehension brings me to one point I would like to make about the gradual approximation exercises I have suggested here. It might be objected of them that they are only devices for the teaching of writing whereas the kind of student I specified at the beginning was one whose basic requirement was for a reading knowledge of English. My reply to this would be that these exercises involve the learner's participation through writing but that this activity is used to make him aware by experience of how English sentences can be put to relevant communicative use, actually to involve him in the discovery of how discourse is realized through the particular medium of the

84 Explorations in Applied Linguistics

English language. This awareness, this discovery, is as crucial to comprehension as to composition: both of these activities are aspects of the communicative competence, of the basic process of interpretation which underlies all language use.

Of course (and here I come to a second point about these exercises), as learning proceeds there will be less need for the learners to participate through the overt activity of writing, and the process of approximation can be made less gradual until the point is reached when an instance of discourse is put in direct juxtaposition with the diagram or other non-verbal representation serving as the priming device, the 'pretext'. What I have offered here are only examples of the *kind* of exercise that might be devised.

The gradualness of the approximation process can, then, be adjusted to suit the learner, to accord with his level of attainment. Another dimension of grading is the difficulty of the discourse towards which the approximation is directed. The passage I have used here for demonstration purposes (taken at random from the textbook cited) does not require the addition of too many propositions in the discourse decomposition to provide for presuppositional gaps. At more advanced levels of instruction, however, more assumption is made about shared knowledge: the reader is expected to be able to infer what is meant on the basis of what he knows about the subject and the ways it is communicated. The choice of passages for gradual approximation treatment, and the kind of treatment given to them, will obviously take this development into account.

It will do so in accordance with the basic principle which I adduced as the starting point for the kind of teaching strategy that I have tried to illustrate here. The exercises I have suggested are of a preliminary and tentative nature and I hold no special brief for them as such. What I would defend, however, is the principle from which they derive: that the teaching of a foreign language (and indeed the teaching of anything) should lead the learner to participate in the exploration and extension of his own linguistic and non-linguistic knowledge and experience. Any language teaching procedure which achieves this, no matter how contrived, will involve the learner in the reality of actual communication.

Notes

Paper presented at the Georgetown Round Table, Washington, April 1976.

- 1 From Peregrine, F. A. W., A. Fox, A. P. Ingram, A. B. Humphries (1968). *Farm Animals: a basic guide to their husbandry*. London: Hutchinson Educational.