LANGUAGE LEARNING PROCESSES

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How do we learn language? This is a question to which there is no definite answer. There are many "best guesses", i.e., hypotheses, and these best guesses are usually founded on a framework of principles, or theory. The sort of answer we give to our question depends, therefore, on the kind of theory we believe in. And the sort of data which we use to support our answer will be selected according to our theory. The theory will guide what we see —our perceptions— and how we explain what we see —our interpretation. Let us look at two different frameworks or theories.

The first theory views all behaviour as being either emitted or elicited. In the case of emitted behaviour, we are not concerned with *why* the organism emitted (or produced) the behaviour. The behaviour occurred, and that was that. By chance, the piece of behaviour produced a result favourable to the organism. Say, for instance, a pigeon placed in a box presses a bar. Next, a pellet of food appears in the box. The pigeon's behaviour thus far has been undirected, accidental, fortuitous. But, pressing the bar has produced a favourable consequence for the bird. It has been instrumental in obtaining a reward. Thus, the pigeon may press the bar again, with the same result. The bird may continue doing this —and being rewarded for his efforts by receiving a food pellet. The pigeon's behaviour is now no longer fortuitous. We may say that the pigeon has learned that pressing the bar = food.

The pigeon's behaviour is called *an operant.* The pellet of food is a reinforcement. The sequence operant-reinforcement-operant is called instrumental learning. The major exponent of this model of learning is B. F. Skinner.

Skinner distinguishes between emitted responses of the type described above, and elicited responses. An elicited response "is one in which priority is given to the stimulus which is seen to act upon a fairly passive organism to trigger a response". (Rogers, 1969: 35). With an elicited response, the experimenter produces a response in the pigeon by making aloud sound, flashing a light, or coaxing the pigeon. The responses which the pigeon produces are called *respondents* "Instead of the bird operating on the environment in a relatively free manner, he responds to a controlling stimulus in a fairly restricted manner". (Rogers, op. cit).

Now, what you may ask, has all this got to do with language learning? Skinner and other behaviourists would say "a lot". Behaviourist psychologists such as Skinner believe that psychology can only describe and account for all behaviour which is observable. Such behaviour can be measured and quantified and, using various conditioning techniques, can be "shaped" and controlled. Anything which happens inside the organism

—that is, anything mental— is not subject to verification, measurement or control. It is inaccessible. It is not, in the behaviourist view, an appropriate subject of study.

To the behaviourist, using language is a type of behaviour, and is therefore subject to the same principles as govern other behaviour. Thus, verbal behaviour can be conditioned, and learning language involves the same kinds of learning activities as occur with the pigeon in the box. Just as the pigeon, for instance, learns to generalize its response to different shaped bars in different boxes, so too the human organism learns to generalize a language response from one set of circumstances to another similar set of circumstances. Likewise, language behaviour can be "shaped" by withholding or providing reinforcement until the desired piece of behaviour is produced.

Maintenance of the response is provided by continued reinforcement, and the question of reinforcement schedules (how frequently and at what intervals) is one which has much occupied behaviourist psychologists in their study of learning in both animals and human beings. A response which goes too long unrewarded will of course die out or become extinct.

How does instrumental learning work in the foreign language classroom? Rivers (1964) describes it as follows. A student emits a foreign language response which is comprehended and thus rewarded by the reinforcement of the teacher's approval. The response is now likely to recur, and with continued reinforcement it becomes established in the student's repertoire as an instrumental response, capable of obtaining certain satisfactions for the student in the form of comprehension and approval in classroom situations. It is even more strongly reinforced if by means of it he obtains what he wants in a foreign language environment. The reinforcement is preserved from extinction by plenty of opportunity to use it and receive more satisfactions — at least while the student is still at school.

The conditioning of elicited language behaviour is carried out in a similar fashion. The teacher presents the class with an object —say a book— and utters the word "book". The teacher then elicits the same response from the class in association with the realia. Subsequent presentations of the stimulus object (the book) elicit the response "book" from the class, and the pupils are rewarded by the teacher's approval. Generalization occurs when the pupils learn to respond with "book" when they are presented with books which differ in size, shape and content from the original stimulus.

Whether the language behaviour is elicited or emitted, the behaviourist sees language learning —either L1 or L2— as a process of habit formation established by operant conditioning. This conditioning process is mechanical, and language learning is subject to the same kinds of reinforcement schedules and "shaping" as other behaviours. Such conditioning is essentially molecular in character. No assumptions are made about the mental (and unobservable) processes going on inside the learner. Errors made by the learner are attributable to overgeneralization or the formation of wrong associations by faulty presentation. Correct associations are made by the careful selection, restriction and sequencing of items to be learned, combined with optimum repetition to the point of overlearning and automaticity.

All of this may strike you as deadeningly mechanicistic, boringly familiar, eminently sensible or exceedingly questionable. And, indeed, anyone who challenges the behaviourist —or empiricist— model of learning is in good company, for currently fashionable theories focus on what goes on *inside* the learner. In other words, interest now centres not on the observable (or empirical) but on mental and the innate. This second view —the rationalist view of human behaviour— is exempli-

fied in the theories of Chomsky in linguistics and of Neiser and Ausubel in psychology.

In the rationalist view, man is the possessor of innate and unique abilities. Equipped with these abilities or competences, man controls his own behaviour. He is not passively at the mercy of the world about him. Man is controller of his own destiny. Even the infant is not merely a bundle of unconditioned responses to be shaped and controlled by his environment. It is in language above all that a behaviourist explanation is seen to be inadequate by Chomsky and other Transformation-generative linguists. In their view, all human languages share underlying similarities, and it is part of the function of linguistics (as they see it) to establish rules which will account for these similarities. The existence of the formal universal features of language can be explained (at least as far as we can make an explanation at the moment) by attributing to human beings (as Chomsky does) a species of specific language faculty. In other words, the facility for language is innate. "Chomsky maintains that it is only by assuming that the child is born with a knowledge of the highly restrictive principles of universal grammar, and the predisposition to make use of them in analysing the utterances he hears about him, that we can make any sense of the process of language-learning". (Lyons 1970: 106). Only in this way, is it possible to explain why the child can produce utterances which it has never heard before.

The rationalist view of language acquisition is in line with current trends in education which place emphasis on the learner and learning rather than on the teacher and teaching. This philosophy is persuasively argued by Carl Rogers (1969) who sees *"the facilitation of learning* as the *aim* of education, the way in which we might develop the learning man, the way in which we can learn to live as individuals in process" (105). This teacher-as-facilitator philosophy overlaps with theories of cognitive psychology, which are concerned with the ways in which knowledge and experience is organized by the individual through such cognitive processes as differentiation and classification. "The term cognition implies mental activity, mental processes. Cognitive psychologists emphasize the role of the mind in acquiring new information. They say that learning is controlled basically by the individual and not by his surroundings. Cognitive theory stresses perception of experiences and organization of knowledge. The mind is not a passive plastic globe to be moulded by environmental forces, but an active and determining agent in the acquisition and storage of knowledge". (Chastain, 1971: 85). The cognitive approach is molar in character, in contrast to the molecular behaviourist view.

Such a molar view of learning goes hand in hand with a view of language as "not so much an arbitrary set of conventions to be used for communication as it is a means of thinking, of representing the world to oneself. Language acquisition is not a conditioning process in which a person acquires the habit of saying certain things in certain situations; rather, it is a process in which the learner actively goes about trying to organize his perceptions of the world in terms of linguistic concepts". (Diller, 1969: 54). The *active* involvement of the learner is a key-note of much recent discussion of both native and second language acquisition. Similarly, the role of language in concept formation is seen to be of great importance.

The importance of concept formation in second-language learning is part of the current move away from the molecular behaviourist approach to language acquisition. "In second-language learning, even in a simple structure drill, it is concept formation we should be seeking to bring about, not merely rote learning of items in a sequence . . . Just as in perception an association cannot be made with previous percepts before there is recognition of the pattern, so in speech learned

associations (sentences, patterns) cannot be useful until the speaker recognizes his requirements for communication as being of a type for which this learned association is appropriate". (Rivers, 1969: 160). The recognition of patterns depends, of course, on the existence in the learner's mind of a framework or structure into which new patterns may be related. It is the integration of newly learned material into the learner's cognitive network which constitutes *meaningful* learning. Cognitive psychologists, such as Ausubel, maintain that the acquisition of large bodies of knowledge is simply impossible in the absence of meaningful learning.

A cognitive theory of language acquisition in conjunction with Transformation-generative may help to explain imperfections in language learner's second language production. If we take the view that all languages share underlying features, and that all learners acquiring a language are likely to proceed through a similar developmental sequence, we might suppose that learners of a second language would parallel native learners of the same language in their acquisition of the L2. There is now some evidence that, in fact, this is so. Ervin-Tripp (1974: 126) says that "in broad outlines . . . the conclusion is tenable that first and second language learning is similar in natural situations". Dulay and Burt (1974) present results which indicate that developmental strategies accounted for 87.1% of the errors among children learning a second language in their survey. Milon (1974) found with a Japanese native speaking child that in learning English there was a striking similarity between the developmental strategies of negation in the acquisition of English as L1 as described by Klima and Bellugi (1966) and the development of negation in the speech of his subject of study. Cook (1969) reviews other research which is consonant with the view that developmental strategies in L1 and L2 follow a parallel course.

It is, of course, easy to dismiss such findings as nonsense. Before doing so, though, we need to ask if anyone in the past has ever systematically studied L1 and L2 acquisition using the same linguistic description as a basis for comparison. Too, teachers of ESL may not always have been struck by L1 and L2 parallels, or if they have, may have dismissed them as being random and unsystematic. The current emphasis on linguistic universals and cognitive processes has served to highlight data which previously has been ignored or else handled in an unsystematic and unenlightening way. If developmental strategies in L2 acquisition do parallell L1 strategies in the same language, then, we must take note of such parallels, since they tell us something very important about the way language is learnt.

Similarly, the L2 learner's "errors" are seen by Corder (1967) and others as an important source of information on the learner's learning strategies. The L2 learner comes to the language learning task with a considerable knowledge of language already available. This knowledge constitutes a cognitive framework into which L2 data is related. The fit (or match) between L1 and L2 data may be in some instances very close, in others very different. (Even though there may be an underlying universal set of rules for languages, these are very abstract and very "deep" level. At surface level, languages may differ very substantially). Where there are close parallels between L1 and L2, the learner will be aided: the similarity will be facilitative. But where there are substancial differences, the learner will find that his attempts to match L1 and L2 features are unsuccessful. Applying an L1 rule will, in this case, result in "errors". As teachers, we need to exercise caution in interpreting such "errors". For instance, children learning English as L1 pass through a phase in learning questions during which a Q word (Where, When, How, etc.) is used in conjunc-

tion with statement word order*. This phase is succeeded by Q word with subject-verb inversion. Many ESL students exhibit the same sequence. Some get stuck in the first phase. Is their "error" a transfer of L1 rules to the L2, or the application of the same kind of developmental strategy as the native English speaking child employs? The debate continues **.

According to Selinker (1972), language transfer —i. e. transfer of L1 rules to L2— is the first of the five factors which produce what Corder and Selinker call an Interlanguage and which Nemser (1971) terms an Intermediate System (between L1 and L2). The second of these factor processes is transfer of training procedures from one language to the other. The third involves the learner's approach to communicating with native speakers, or strategies of communication. Finally, there is the learner's overgeneralization of target language linguistic rules.

This last factor brings us to another important point. Once a learner has begun to learn a second language —either formally or informally— he is no longer a naive learner. This means that he is starting to set up additional (or at least modified) cognitive structures to which new language input is related. He may do this inductively. For instance, he may work out a rule (which he may not be able to articulate, of course) that all words like *boy, book, hat* and *house* —that is, count nouns— can be made plural by the addition of *s*. He then applies this rule to such words as *sheep, bread, fruit* and *furniture*. The fact that he does this shows that he has learnt a rule, just as native English speaking children also learn the same rule and apply it in the same way. The recognition and zealous application of the rule by the learner simply means that he is now handling new language input within a new or modified cognitive framework. He has learnt something. The next step is not to "unlearn" but to modify the rule and, given the right sort of data, he will do that.

The above explanation is plausible, but it demonstrates one of the restrictions of all such interpretations at what Schumann has called "product level", and that is, it is unsupported by a substantial body of research —linguistic, or psychological. In any case, Tarone, Swain and Fathan (1976) caution against hasty pedagogical applications from linguistic research. Rather, "it is better to see the current application of research as comprising an influence which indirectly and subtly changes the teacher's attitude towards what he or she is trying to do in the classroom changing the Teacher's attitude towards errors, for example or leading the teacher to pay more attention to forms the students are producing. Such a change in attitude may be the most important application of current research which can be made to the field of language teaching" (30). This viewpoint reflects both Chomsky's (1966) scepticism "about the significance, for the teaching of languages, of such insights and understandings as have been attained in linguistics and psychology" ... and Seliger's (1975) warning that a "theory of teaching a second language is in itself illusory".

We have reviewed, very briefly, two basic philosophies and their interpretation of the language learning process Behaviourism, molecular and mechanistic in its approach, is subject to the same learning principles as other forms of behaviour. This means that learning a language involves a process of conditioning in which the learner is passively manipulated by his environment. Taking a molar view of learning, the rationalist philosophy, sees man as possessing an innate language faculty. Learning a language is an ac-

*Cf. Ursula Bellugi (1968) "Linguistic Mechanisms Underlying Child Speech" in Zale (ed) *Proceedings of the Conference on Langucge and Language Behaviour.*

**Note Jack C. Richards (1971) A Non-Contrastive Approach to error analysis, *ELT* 25, 204-19.

tive process to which the learner –either of L1 or L2– brings a set of innate linguistic and cognitive abilities. Man is an agent in his own learning.

How does the Language teacher choose between these two basic philosophies? Chastain (1971: 154) suggests that "the answer seems to be at the present he cannot, or should not. Above all, he should avoid the temptation to say, *'This* is the right method'. If anything has been learned to date, it is that there is no single best method. Students are different, and they learn in different ways. Teachers are different, and they teach in different ways. An effort must be made to provide as many different learning experiences as possible". And these learning experiences should be, as Seliger (op. cit.) reminds us, "a reflection of how the learner learns something".

What, you may ask, does this mean for the Foreign Language teacher? It is not easy to translate principles into classroom practice. Even so, several methodological implications are fairly obvious. The first is that the capacity of the learner to perceive regularities, patterns and arrangements can be used to facilitate learning. This can mean, for instance, focussing on the formal features of parts of speech and on the arrangement of constituents in the noun phrase, or the sentence. "Find another word like *"walked"* is the type of instruction I have in mind when dealing with "grammar".

The second point is that the learner needs to understand what he is doing and why he is doing it. In other words, his learning must be meaningful to be effective. This does not mean giving him long, involved explanations. It may mean involving the learners themselves in working out what they are doing. For instante, a presentation lesson on questions migth involve reception of the new item on the part of the students, leading to a discussion of what new kind of activity they had just been presented with. Discussion will reveal that they have just been introduced to a new language activity (questioning) and that the formal features of this activity include Subject / Verb inversion. This can lead to a discussion (if necessary in the L1) of when and why questions are used, followed by more receptive and active practice.

The third point is that not all learners learn effectively from oral input instead of written material. So as to help all learners, it is essential to provide a variety of presentation techniques. Learners who are "eye orientated" will have the benefit of visual presentation; those who are "ear orientated" will benefit from spoken presentation. In other words, a multi-media exposure is important so as to involve the particular predisposition of all learners.

Finally, presentation and practice of language should provide the learner with opportunities to use language for a real communicative purpose. Even a pattern drill, whose purpose is to set up automatic responses in the learner, can be presented and practiced in such a way that the learner is actually involved in communication rather than meaningless repetition. The game of Twenty Questions, hardly a new technique, of course, is an example of providing repeated drill activity in a real communication situation which is also amusing.

None of these suggestion will seem particularly startling. Good teachers have been using the best of both approaches –behaviourist and cognitive– for years. What the present interest in learning may provide is a greater insight into the learner's contribution to learning. Equipped with such knowledge, we language teachers may be able to devise more effective ways of facilitating the learning process. In the meantime, we should keep Chastain's warning in mind, and maintain an eclectic and non-partisan approach to our work.

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