

adult's struggles with a new kind of linguistic input. Second, there is a wide range of ways in which the human language faculty gains access to a second linguistic system, ranging from metalinguistic description, as in traditional Latin classes, to language learning by everyday communication, as in the case of a foreign worker. In the history of mankind, explicit teaching of a language is a relatively late phenomenon, and untutored learning was, and probably still is, the most common case; but due to its practical importance, SLA in the classroom still dominates research.

Linguists and laymen alike tend to consider children's way to their mother tongue to be the most important type of language acquisition. This view seems most natural; but it leads easily to a distorted picture of how the human language faculty functions, and what its typical manifestations are. FLA is a very complex mixture of cognitive, social and linguistic developments, and it is not easy to isolate its purely linguistic components. The acquisition of the English tense and aspect system, for example, not only requires the learning of a particular mapping of forms and meanings, but also the development of the concept of time itself. Moreover, most people learn more than one language, albeit to different degrees of perfection. Therefore, the *normal* manifestation of the human language faculty is a 'learner variety,' i.e., a linguistic system which comes more or less close to the linguistic habits of a particular social group. In a child's case, the final learner variety is usually a 'perfect replication' of these habits; children who grow up in multilingual communities often achieve two or even three such perfect replications. Adults who set out to learn another language hardly ever reach a stage where they speak like those from whom they learn; their 'learner varieties' normally fossilize at an earlier stage. This does not mean that their final learner variety is less of a language, or less efficient; there is no reason to assume that a linguistic system which says 'He swam yesterday' is a superior manifestation of the human language faculty than a system which says 'He swam yesterday' or even 'He swim yesterday.' It is just the way the English do it, and deviations from their norms are stigmatized. If the study of language acquisition, and of SLA in particular, should inform us about the nature of the human language faculty, then it must not focus on issues of perfect replication and why it fails sometimes, but try to clarify how the human language faculty deals under varying conditions with particular forms of linguistic input to which it has access. The first step to this end is to isolate the crucial factors which play a role in this process, and to look at ways they can vary. The second step is to investigate what happens under varying constellations. The final step is to draw generalizations from these findings and to turn them into a theory not just of language acquisition, but the nature of human language itself (Klein 1986).

Second Language Acquisition

Humans are all born with the capacity to learn and to use a language; but they are not born with a language. It is not part of human genetical endowment that 'horse' means 'equine quadruped,' that the past tense is marked by '-ed,' or that the negation follows the finite verb; this knowledge must be derived from the input with which the learner is confronted. The ways which lead this innate language faculty to the knowledge of a particular linguistic system vary considerably, depending on factors such as age, nature of input and whether this task is undertaken for the first time ('first language acquisition,' FLA) or not ('second language acquisition,' SLA). SLA is not a homogeneous phenomenon, for at least two reasons. First, it need not wait until the learner has completed FLA; hence, there is a continuous transition from bilingual FLA, in which a child is exposed more or less simultaneously to two systems from birth, to the

The picture which research on SLA offers at the time of writing is much less systematic. As with so many other disciplines, it has its origin in practical concerns; researchers were looking for scientific ways to improve foreign language teaching, and this seems impossible without a deeper understanding of the principles of SLA. Therefore, most empirical work in this field is still in the classroom. A second source of inspiration was research on FLA, which started much earlier and therefore set the theoretical and methodological stage. More recently, work in theoretical linguistics has increasingly influenced research on SLA. These and other influences, for example from cognitive and social psychology, resulted in a very scattered picture of theories, methods and findings. Rather than reviewing this research, the following discussion will concentrate on three key issues (useful surveys are found in Ellis 1994, Ritchie and Bhatia 1996, Mitchell and Myles 1998, Braidí 1999).

1. SLA and Foreign Language Instruction

The pedagogical background of SLA research has led naturally to a particular view on SLA, for which two assumptions are constitutive:

(a) There is a well-defined target of the acquisition process—the language to be learned. This *target language* is a clearly fixed entity, a structurally and functionally balanced system, mastered by those who have learned it in childhood, and more or less correctly described in grammars and dictionaries.

(b) SLA learners miss this target at varying degrees and in varying respects—they make errors in production as well as in comprehension, because they lack the appropriate knowledge or skills.

This is the *target deviation perspective*. It is the teacher's task to erase, or at least to minimize, the deviations; it is the researcher's task to investigate which 'errors' occur when and for which reasons. As a consequence, learners' performance in production or comprehension is not studied very much in its own right, as a manifestation of learning capacity, but in relation to a set norm; not in terms of what learners do, but in terms of what they fail to do. The learners' utterances at some time during the process of acquisition are considered to be more or less successful attempts to reproduce the structural properties of target language utterances. Learners try to do what the mature speaker does, but do it less well. Three reasons make the target deviation perspective so natural and attractive, in fact, almost self-evident. First, it is the natural perspective of the language teacher: language teaching is a normative process, and the teacher is responsible for moving students as closely to some norm as possible. Second, it is also the natural perspective of all of those who had to learn a second language in the classroom—and that means, also, of practically every language researcher. Third, the target deviation perspective provides the re-

searcher with a simple and clear design for empirical work. There is a yardstick against which the learners' production and comprehension can be measured: the target language, or actually what grammar books and dictionaries say about it. What is measured is the differences between what learners do and what the set norm demands. Therefore, the dominant method in SLA research was, and is, error analysis: Learners' errors are marked and then either counted and statistically analyzed, or they are interpreted individually (Corder 1981, Ellis 1994, pp. 561-664).

There are two problems with this perspective. First, it does not tell us what learners *do* but what they are *not able* to do. Second, its results reflect not just the principles according to which the human language faculty functions, but the efficiency of a particular teaching method. Therefore, this approach may be of eminent importance to the language teacher, but it is of limited value if we want to understand the nature of human language.

2. FLA and SLA

Experience shows that FLA normally leads to 'perfect command' of the target language, whereas SLA hardly ever does. Why this difference? Is perfect attainment of a second language possible at all? Does the learning process only stop at an earlier point, or does it follow different principles?

The last question has found two opposite answers. The *identity hypothesis*, advocated by many researchers in the early 1970s, claims that the underlying processes are essentially the same across all types of acquisition. Under this view, the fact that the learner already knows a language plays no role: there is no transfer from the 'source language' (Odlin 1989). Evidence came mainly from the order in which certain grammatical phenomena, such as inflectional morphemes or the position of negation, are acquired. It turned out, however, that these similarities are quite isolated; there are hardly any supporters of the identity hypothesis anymore. Under the opposite view, it is mainly structural differences between source and target language that cause problems for learners. This *contrastive hypothesis* has given rise to a number of contrastive grammars for pedagogical purposes. But while there are many clear cases in which learners' first language interferes in the learning process, structural contrasts can at best account for some properties of the acquisitional process. In acquisition outside the classroom, for example, all learners regularly develop a particular type of 'learner variety' which is essentially independent of source and target language (see Klein and Perdue 1997). The net result of thirty years of research is simply that there are similarities as well as dissimilarities.

The varying success in final attainment could be due to (a) age differences, or (b) to the fact that there is already a language which blocks the acquisition of a

second language. The second possibility is ruled out by the fact that school age children normally have no problem in learning a second language to perfection; hence, the varying success must be an age effect. Apparently, the capacity to learn a language does not disappear, but it deteriorates with age. Since this capacity is stored in the brain, it seems plausible to assume that changes in the brain are responsible for the age effect. The clearest statement of this view is Lenneberg's theory of a biologically fixed 'critical period,' during which the brain is receptive for language; it ranges approximately from birth to puberty. After this period, linguistic knowledge can only be learned in a different form, roughly like the knowledge of historical or geographical facts (Lenneberg 1967). This theory has the seductive charm of simple solutions, and hence has been welcomed with great enthusiasm. But as far as is known, all potentially relevant changes in the brain occur in the first four years of life, rather than around puberty. Moreover, all available evidence shows that the capacity to learn a new language deteriorates only gradually; there is no clear boundary at puberty or at any other time. Finally, it could be shown that 'perfect attainment' is perhaps rare but definitely possible after puberty (see Birdsong 1999). It appears, therefore, that there is no clear biological threshold to language acquisition; the age effect is due to a much wider array of factors (Singleton 1989).

3. SLA and Theoretical Linguistics

The apparent ease and speed with which children, despite deviant and insufficient input, become perfect speakers of their mother tongue has led Noam Chomsky and other generative grammarians to assume that a great deal of the necessary linguistic knowledge is innate. Since every newborn can learn any language, this innate knowledge must be universal, and it is this 'universal grammar' (UG) which is the proper object of linguistic theory. Since languages also differ in some respects (otherwise, SLA would be superfluous), the competence of mature speakers is supposed to include a 'peripheral part,' which includes all idiosyncratic properties and must be learned by input analysis, and a 'core.' The core consists of a number of universal principles—the UG. Initially, these principles include a number of 'open parameters,' i.e., variable parts which must be fixed by input analysis. Chomsky made this point only for FLA, and only in the mid 1980s was the question raised whether UG is still 'accessible' in SLA.

A number of empirical studies tested the potential 'resetting' of various parameters. Spanish, for example, allows the omission of a subject pronoun, a property which is structurally linked to other features such as a relatively rich inflectional word order and relatively free word order; these and other properties

form the 'pro-drop parameter.' English children have set this parameter the opposite way when acquiring their language. Are adult English learners of Spanish able to 'reset' it, or do they have to learn all of these properties by input analysis? Results are highly controversial (see e.g., Eubank 1991, Epstein et al. 1997). Although inspired by theoretical linguistics, most empirical research in this framework keeps the traditional 'target deviation perspective'; with only a few exceptions, it deals with acquisition in the classroom, hence reflecting the effects of teaching methods. Moreover, there is no agreement on the definition of the parameters itself; in fact, more recent versions of generative grammar have essentially abandoned this notion. Finally, it is an open issue as to which parts of linguistic knowledge form the core and which parts belong to the periphery, and hence must be learned from the input. These language-specific parts clearly include the entire lexicon, the inventory of phonemes, inflectional morphology, all syntactic properties in which languages can differ—in short, almost everything. It seems more promising, therefore, to look at how learners construct their learner varieties by input analysis.

4. Learner Varieties

The alternative to the target deviation perspective is to understand the learners' performance at any given time as an immediate manifestation of their capacity to speak and to understand: form and function of these utterances are governed by principles, and these principles are those characteristic of the human language faculty. Early attempts in this direction are reflected in notions such as 'interlanguage,' 'approximate systems' and so on. Since the 1980s, most empirical work on SLA outside the classroom has taken this 'learner variety perspective' (von Stutterheim 1986, Perdue 1993, Dietrich et al. 1995). In its most elaborate form, it can be characterized by three key assumptions (Klein and Perdue 1997).

(a) During the acquisitional process, learners pass through a series of learner varieties. Both the internal organization of each variety at a given time, as well as the transition from one variety to the next, are essentially systematic in nature.

(b) There is a small set of principles which are present in *all* learner varieties. The actual structure of an utterance in a learner variety is determined by a particular interaction of these principles. The kind of interaction may vary, depending on various factors, as the learner's source language. With ongoing input analysis, the interaction changes. Picking up some component of noun morphology from the input, for example, may cause the learner to modify the weight of other factors to mark the grammatical status of a noun phrase. Therefore, learning a new feature is not adding a new piece of puzzle which the learner has to

put together. Rather, it entails a sometimes minimal, sometimes substantial reorganization of the whole variety, where the balance of the various factors approaches the balance characteristic of the target language successively.

(c) Learner varieties are not imperfect imitations of a 'real language' (the target language), but systems in their own right. They are characterized by a particular lexical repertoire and by a particular interaction of structural principles. Fully developed languages, such as Spanish, Chinese or Russian, are only special cases of learner varieties. They represent a relatively stable state of language acquisition—that state where learners stop learning because there is no difference between their variety and the variety of their social environment, from which they get input.

Thus, the process of language acquisition is not to be characterized in terms of errors and deviations, but in terms of the twofold systematicity which it exhibits: the inherent systematicity of a learner variety at a given time, and the way in which such a learner variety evolves into another one. If we want to understand the acquisitional process, we must try to uncover this two fold systematicity, rather than look at how and why a learner misses the target.

See also: First Language Acquisition: Cross-linguistic; Foreign Language Teaching and Learning; Language Acquisition; Language Development, Neural Basis of

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