III Error Analysis and the Nature of Simplification in Second-Language Acquisition

In recent years the views of psychologists and linguists concerning language acquisition have undergone profound, indeed revolutionary changes. Attention has been shifted from the data provided as input to the learner — teaching materials and procedures — to the nature of the psychological structures and processes that determine how the learner will perceive and interpret these data. A fundamental step in second-language learning is the formulation of hypotheses about input data on the part of the learner, as S. Pit Corder has put it (1973), the nature of his *intake.* Adherents of this view about second-language acquisition hypothesize that the structure of the intake may be revealed by learner errors, and they have placed great emphasis on the observation and analysis of learner errors. Errors, then, are not pathological manifestations to be eradicated but constitute instead the most direct evidence available of learner hypotheses and strategies.

The observation and analysis of errors of second-language learners and the characterization of learner intake have received particular attention at the Neuchâtel Colloquia on Applied Linguistics. The discussion in this area centered on two principal topics: the implication of errors for the design of syllabi and the preparation of teaching materials; the nature and the origin of the hypotheses formulated by learners errors from which errors stem. Related to the latter question is whether the psychological processes that underlie this hypothesis formulation are specific to second-language learning or, on the contrary, are shared by all types of language acquisition, including the use of "simplified" or "reduced" varieties.

At the 1974 Colloquium Bernard Py and Albert Valdman presented the results of two studies illustrating narrowly focused longitudinal collection and observation of errors. Both studied the acquisition of French interrogative structures on the part of foreign learners in a formal classroom environment. Py's study "Expériences sur l'acquisition des structures interrogatives du français" took place in the French-speaking Swiss canton of Neuchâtel and involved a multilingual group of adolescent learners who had the opportunity of using French outside of the classroom; Valdman's more circumscribed experiment *(Error analysis and pedagogical ordering)* was based on the administration of a speaking test to first-semester students enrolled in an American university whose contact with the language took the form exclusively of classroom instruction.

Py addressed himself centrally to the question of the characterization of developing transitional competence in the target second language (L_2) in terms of approximative rules. He proposed that these rules develop in six steps:

1. the overgeneralization of a new rule;
2. the delimitation of the domain of application of the new rule;
3. the application of constraints on the rule, e.g., in the case of inversion in French interrogative sentences, the restriction of straight-forward inversion (without copying of the NP) to pronominal subjects *(mange-t-il* vs. *Pierre a-t-il mangé);*
4. the replacement of a general rule by more specific sub-rules;
5. the integration of individual rules into larger sets;
6. the development of transformational machinery involving for example the replacement of surface calquing by deeper leveled constructions.

Valdman investigated the application of the result of error observation and analysis to the selection and the ordering of grammatical features in the design of course syllabi and the preparation of teaching materials, two central areas in applied linguistics. Starting from the assumption that the variant interrogative constructions of French *(où va-t-il, où est-ce qu'il va, il va où, où il va)* are synonymous he proposed to determine which variant is easier to acquire by foreign learners. His data show that, although the subjects were exposed only to the two constructions characteristic of formal styles (inversion and *est-ce que* ante-position), in the testing situation which required them to produce questions within the context of a communicative task and under limitations of time, they produced with greatest frequency the variant characteristic of colloquial speech *(où il va).* Since that construction does not parallel the corresponding L_1 structure, it was postulated that it reflects the structurally simplest form available to them at that stage of instruction. In a subsequent trial the "erroneous" construction was presented first, followed by *est-ce que* ante-position and inversion. The frequency of the erroneous construction produced in the speaking test was reduced in favor of the target construction *est-ce que* ante-position with an accompanying sharp drop in intralinguistic interference between inversion and *est-ce que* ante-position. Valdman concluded that error analysis could contribute to the establishment of *pedagogical norms,* a procedure aimed at increasing the generality of rules by the elimination of "free" variance.

Py is more cautious in the direct application of the result of the observation and analysis of errors. In the more natural situation in which he collected his data, facts proved to be much more complex and no simple guidelines for the selection and ordering of materials emerge. He points out that interlingual interference develops no matter which of the four constructions is introduced first. Also in a free-learning situation it is impossible to control input (and to tamper with intake). Rather he suggests that interlinguistic interference between the variant constructions might be

reduced by tying each to a specific situational context, say, inversion to formal discourse. This approach, which has the merit of recognizing that the variant French interrogative constructions have different communicative functions and are, therefore, not synonymous in a strict sense, enables the learner to more readily attain genuine communicative competence.

In the analysis of errors much attention has been given to identification of the source (interlingual vs. intralingual errors, overgeneralization, transfer-of-training, etc.). There is little research on the communicative effect of errors despite the fact that the latter has wide implications for pedagogical practice. For instance, errors that native speakers fail to notice need minimal correction and they may even find their place in pedagogical sequences. Stig Johansson's paper "Problems in studying the communicative effect of learner's errors" aims to fill this gap.

Previous studies of the communicative effect of learner errors (Olsson 1973) have focused on interpretability of deviant sentences on the part of learners. Johansson chose to study the relative gravity of errors as measured by the degree of irritability induced in native listeners or, more exactly, their "distrubing" effect. The research on which Johansson reports intended more specifically to correlate two approaches in the evaluation of gravity: direct evaluation in which listeners emit overt judgments, such as ranking various types of errors on a scale, and indirect evaluation. The latter approach consisted of two sorts of tasks: first, native English listeners were required to write down sentences produced by Swedish learners that contained three types of syntactic deviations — errors in complementation, concord, and word-order. The average number of subjects correcting each deviant sentence of the corpus provided an index of the severity of the error it contained (it was found that errors in complementation attained the highest gravity index). Second, the subject read texts containing no deviant sentences. The texts containing errors required a longer reading time and the differences amongst the three error laden texts correlated with the gravity index of Task One. The direct judgments elicited also yielded results correlating with those of the indirect evaluations; this suggests that direct judgments, which are more readily and easily elicited, provide reliable evaluation of the relative disturbing effect of errors on native listeners. Johansson concludes in suggesting that many other factors affect the reaction of native speakers to errors: the situational context (errors are more likely to be tolerated in informal circumstances), the medium (speech vs. writing), and the characteristics of the participants in speech acts (age, educational level, etc.).

The major role attributed to the formulation of hypotheses about output data on the part of learners implies that L_2 acquisition involves primarily complex mental operations deriving from knowledge structures, more

particularly knowledge of rules. W. J. M. Levelt, a psychologist and the first non-linguist to have participated in the Neuchâtel Colloquia, points out in "Skill theory and language teaching" that knowledge cannot account for performance and that, notwithstanding the fact that behavioral theories of L_2 acquisition have proven to be inadequate or irrelevant, the characterization of language learning is incomplete without recourse to some account of performance factors. Such a model, Levelt proposes, is offered by human performance theory whose focus is the study of the nature of skill and attention. After a review of the model as it relates to L_2 acquisition, Levelt applies it to certain aspects of learner errors.

The complexity of skill is a function of the variety of mental operations in temporal integration. The capacity of the learner for mental tasks is not limitless and depends primarily on arousal, a notion that must not be confused with motivation. Attention, defined as the capacity for mental tasks, may be increased more effectively by feedback (knowledge of results) than by incentives. Paradoxically, whereas capacity is increased by arousal it may be reduced if arousal is excessive, as in the case of fatigue or the extreme tension characteristic of examinations.

Mental tasks are made up of sub-tasks hierarchically ordered and guided by plans. Skill entails relegating sub-plans, particularly low-level plans, to long-term memory so that short-term memory capacity is available for higher-level decisions. Lower-level plans must be automated, although Levelt stressed the fact that automation of plans does not entail necessarily rote memorization or drill activities.

Applying skill theory to learner errors Levelt shows that they may stem from:

1. lack of knowledge of rules at all levels — phonetic, syntactic, semantic and pragmatic;
2. interference between programs, both inter- and intra-linguistic (more often than not, interlinguistic interference is facilitative since the corresponding programs of L_1 and L_2 are compatible);
3. insufficient automation of sub-plans, although non-automated programs may be produced without errors if total attentional capacity is not expended;
4. insufficient supply of attentional capacity resulting from fatigue, drugs, the wrong evaluation of task demands, insufficient feedback, or excessive arousal;
5. dispersion of attention;
6. rewarding effect of failure, as when a foreign learner discovers that speaking with an accent lessens communicational demands made on him or confers prestige.

While further inquiry into the implications and applications of human performance theory for L_2 learning is needed, and more explicit correlation between the basic notions of the theory and processes of language acquisition required, its relevance to problems and issues in the area of error analysis and learner systems appears established. For instance, skill theory accounts for the fact that errorless performance is not necessarily indicative of acquired skill: the learner is in this case operating with excess capacity and the degree to which he has automated the sub-plans involved in the particular language task may be checked by increasing higher-level decisions or reducing the time available. Conversely, errors may be reduced by allowing more time for learner responses and by reducing demands on short-term memory. Finally, greater tolerance of deviant performance makes additional attentional capacity available for higher-level decisions.

A considerable body of research consisting primarily of longitudinal observation (Cancino et al 1972; Cook 1969; Dato 1972; Dulay and Burt 1972, 1974a, 1974b; Hakuta 1974; Hatch 1972, etc.) has revealed striking similarities in the development of linguistic competence of children acquiring their L_1 and children and adults engaged in L_2 learning. It has also been shown that adults have the capability of reducing fully-formed language to various types of "simplified" registers employed under certain socially-determined circumstances: baby talk, foreigner talk, lover talk, etc. (Ferguson 1971, 1975). In "Simple codes and the source of second language learners' initial heuristic hypothesis" S. Pit Corder rejects the notion of simplification, which he views as reflecting a comparative, evaluative stance toward the language of children, reduced registers, pidgins and creoles, and L_2 learners' approximative systems. Rather, he proposes that these varieties of language be viewed as basic and that normal, fully-formed adult speech represents an elaboration of a universal base shared by all so-called simplified forms of language.

The existence of reduced registers constitute for Corder strong evidence that human beings are endowed with the ability to revert to the earlier, more basic stage of linguistic development. Reduced varieties, pidgins and creoles, and approximative systems represent fossilized intermediate stages in the process of elaboration. Corder suggests further that the heuristic device available to the L_2 learning does not consist in a set of strategies for simplification but of the universal linguistic base reflected in less elaborated varieties of language and whose form depends on the learner's previous language learning experience: L_1 acquisition, the use of special registers, previously acquired L_2's. Finally, linguistic elaboration or complexity is determined by communicative demands and the function of the discourse: "a speaker adopts just that point on the simple-complex continuum which is

complex enough for successful communication and ... he 'shifts' up and down the scale as circumstances require (6)."

Bickerton (1974), Kay and Sankoff (1974), and Traugott (1973) have attempted to specify the nature of the common base, the psychological processes common to all types of language acquisition. Traugott suggests that when we learn a L_2 we revert to natural strategies for the perception and expression of universal linguistic categories. The perceptual strategies refer to certain constraints on the learnability of linguistic features such as those proposed by Slobin (1973). These include, for example, paying attention to the final portion of words, the use of a single type of word order, or the avoidance of permutation of sentence elements. Underlying the notion of natural expressive strategies is the belief that there are certain innate features of phonology and grammar. Learning a specific language involves the imposition of particular constraints on these universal natural features. In "Pidginization, creolization, and the elaboration of learner systems" Valdman and Phillips review the position on language acquisition set forth above and attempt to illustrate one such universal expressive strategy, the tendency to realize such grammatical categories as aspect, tense, mood, deixis, etc. by means of free forms — particles and prepositions — rather then inflectional endings by comparing the development of nominal determination in Vietnamese Contact French (Tây Bôi) and in French child language (as described in Grégoire's classic longitudinal study, 1937, 1947). They show that speakers of the VCF reject the morphophonemically variable pre-posed determiners of French in favor of the invariable post-posed particles -ci and -là derived, ultimately, from locative adverbs. The two children studies by Grégoire also used post-positions: -ça and -là, although unlike the speakers of VCF they began to use pre-posed material to effect gender differentiation in nouns. On the basis of the similarity and differences between VCF and French child language Valdman and Phillips propose that pidginization and L_2 learning are not underlain by different psychological processes but reflect different social factors. Children learning their L_1 are being enculturated whereas adult learners are being acculturated after prior socialization by means of their L_1. What distinguishes the learning of an L_2 in a free-learning situation from pidginization is the fact that acculturation accompanies the acquisition of linguistic competence. Formal L_2 learning differs from both by the insistence on the part of teachers on the use of elaborated forms in the absence of any significant degree of socialization, surely, as Valdman and Phillips emphasize, "one of the most striking paradoxes of formal second language learning.'"

In "The significance of simplification" Henry G. Widdowson emits strong reservations about the validity of input-oriented simplification (reflected in

the selection and ordering of structural features in the design of syllabi and the preparation of teaching materials). But he also rejects conventional error analysis and questions whether transitional competence provides information about the simplification operated on the intake by the learner. This is because L_2 learners operate with two types of rules, *expression rules* and *reference rules*. The latter refer to the learner's competence in the L_2, his knowledge of the rules characterizing the target norm which may be determined from the types of errors he will correct when his attention is drawn to them. Expression rules characterize the learner's actual linguistic behavior in communicative situations. The relationship between the two sets of rules is indirect: "In normal language use we are constrained by the requirements of communicative effectiveness, and we therefore develop expression rules which relate to but are not a direct reflection of the reference rules which constitute our linguistic competence."

Simplification in Widdowson's sense refers to the linguistic user's adjustment of his linguistic behavior in the interest of communicative effectiveness. It is for that reason that the L_2 learner's errors in communicative situations do not reflect his knowledge of reference rules, and why attainment of stated levels of linguistic competence does not translate into specific levels of communicative competence. Reference rules are also variable rules analogous to the rules that relate a native speaker's use of vernacular forms to the target standard language norm (Labov 1964). As was the case with regard to the learner's ability to hypothesize superficially simpler rule systems, expressive rules represent the application to L_2 learning of strategies developed for successful communication in the L_1.

Paradoxically, adjustment for communicative effectiveness does not always take the form of simplification of reference rules; simplification may involve complication as well as greater elaboration and explicitness of linguistic form, as is the case for instance with paraphrases and periphrases.

Widdowson's interpretation of simplification helps explain why teacher-imposed simplification and teacher "guidance" are often ineffective. They focus on reference rules and therefore run counter to the learner's experience with language by denying the development of expression rules. However, Widdowson is not advocating the type of error guided design of syllabus tried out by Valdman. While Widdowson accepts the use of erroneous forms in formal L_2 instruction, he points out that all language users operate with an idealized norm from which they necessarily deviate in communicative situations.

Developing his notion of simplification further, Widdowson suggests that all teaching involves the organization and expression of areas of inquiry to make them congruent with the learner's experience. He concludes with the

proposal that second languages as language use (as versus language usage which is the domain of linguistics) not be taught as a subject matter in its own right but as a type of "simplified" presentation of other subjects. In this way language teacher can improve the pedagogic practice of colleagues by indicating to them how language functions to communicate effect.

Indiana University   A. Valdman
Bloomington

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