

L1 Influence and L2 Perception

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Introduction

The adolescent or adult student of a second language brings to his task long experience in his native language, and a good knowledge of the world around him, plus some limited idea of the L2 he has chosen to confront—all of which will influence his learning of a new language. This paper focuses on the influences of L1 in L2 learning, sometimes called “language transfer.”

Interest in this area has revived in recent years and has been described in various ways: as a utilization of L1 knowledge in hypothesis testing regarding L2 (rf. Gass and Selinker 1983, p. 7); as a constraint on the hypotheses formulated regarding L2 (rf. Schachter 1983, who includes in this restraint knowledge of L2 already acquired and consequent expectations). Corder (1983) prefers to avoid the term transfer and steers away completely from any negative notion like “interference.”

I would like to suggest that L1 influence in L2 learning is best understood in terms of perception/interpretation interaction according to the definitions of those notions offered in Sell (1988).

In that paper, a view of human cognition along Aristotelian lines was outlined and suggested as a framework for parallels in second language acquisition. According to the model of cognition used, the knowledge of objects is a mental organization in three successive stages: *primary* (arising from direct sensing), *secondary* (creative syntheses and evaluations of concrete experiences, objects and images), and *intellectual*

(abstract knowledge arising from a grasp of the essences of things).

Perception, the fullness of concrete knowledge, arises from the secondary organization in cognition and according to the “cogitative,” a filter-type faculty by which new phenomena are recognized and evaluated according to past experience plus creations of the imagination. Perception and intellectual knowledge relate in mutual dependence and in closely coordinated operation.

A parallel in L2 learning was suggested, where perception is defined, somewhat analogously, as a full and accurate recognition of phonological and syntactic structurings of L2 sentences heard, a necessary condition for accurate semantic interpretation. Conversely, perception was seen as influenced by the more creative and subjective level of interpretation according to the learner’s current state of knowledge of L2, as well as of L1 and of the world. In both cognition and L2 learning, perception is seen as pivotal and crucial, mediating between data sensed and understanding.

It was argued, against extreme versions of the innateness hypothesis, that this model of learning, from concrete experience to abstract knowledge, is found in L1 acquisition, and that it will more readily account for the individual learner’s *creative* contribution to the formulation of both intellectual knowledge and the native language.

In the basic question of defining the goals of an L2 program, the framework above suggested that *proficiency* (arising from L2 experience) will be a condition for internalized and subconsciously known rules. Rules will be created by the learner to cover the data of utterances heard, but only given a proficiency in the natural language activities. Both L2 proficiency and knowledge are seen to be conditioned to perception.

In terms of perception (of form) and interpretation (of meaning), the traditional levels of analysis pose the following problems for L2 learners: phonological and syntactic perception; semantic interpreta-

tion; and both perception and interpretation at the level of lexis/morphology.

Although the term “perception,” recognition of form, applies quite adequately to both phonology and syntax, it differs in the two cases in its distance from the “hard data” of L2 sounds heard directly: phonological perception is immediately proximate to sounds. And, within syntax, recognition of more generalized categories like NP and VP is more distant from phonological perception than recognition of *noun, adjective*, etc. To coin a phrase that will be useful below, the *perceptual accessibility* of phonology is greater than that of syntax; and the varying levels of syntactic analysis vary also in their accessibility to the learner’s perception. In both cases perception relates immediately to interpretation of meaning: syntax, to semantic interpretation of phrases and sentences; phonology, to recognition and interpretation of words and morphology.

And, in the reverse direction, interpretation in each case can influence the perception of form where perception is lacking or obviously mistaken: just as pragmatic considerations can guide the learner in semantic interpretation of utterances, interpretation, in turn, can guide the recognition of syntax; and word recognition can supplement gaps or errors in perception of phonology.

A hypothesis

The interaction between L2 utterances heard and a learner’s knowledge and abilities can be seen as a confrontation between data *as perceived* from the outside and the learner’s expectations (priorly formulated hypotheses) from within. Data as perceived enjoys, in the learner’s mind, the authority of *being L2*, and interpretation follows in the line of what is perceived. Therefore, when a datum counters expectations, it is the hypothesis that is altered. And, insofar as perception is simply lacking, or is mistaken (*He hurt his needs*), expectations tend to

correct of fill the gaps with an interpretation that *imposes* a form (*He hurt his knees*).

Interpretation, from within the mind, is prone to influences from other knowledge and remembered experience in the mind, including the native language. L1 knowledge operates, along with other knowledge, to supplement faulty perception by imposing interpretation according to L1 expectations or hypotheses.

Perception is the other area of L1 influence. The learner's phonological classification of L2 segmentals and suprasegmentals in utterances heard is biased in the direction of L1. Engrained familiarity with L1 phonology has a filter effect on L2 utterances which guides perception correctly in global ways but also distorts it in the details (an English unvoiced dental stop is recognized by a Japanese speaker, while its aspiration may not be perceived). At the same time, sounds are the most directly perceived level of L2; and in competition with an engrained L1 phonology, the segmentals and suprasegmentals of L2 utterances incorporate a salience not found at the word level, much less at the utterance or syntax levels: L2 sounds hit the ear drums directly. On the whole, and to a great extent, the features of a foreign phonology make it through the filter, which is what enables word recognition in spite of the counter-effects of L1 filtering.

The perception of L2 syntactic form is likewise L1-biased, but the nature of this influence is apparently very different from that of phonology. For being closely associated with semantic interpretation of sentences, syntactic perception is influenced by not only L1 syntax, but by the "impositions" of L2 semantics, of L1 semantics, *and* considerations of common sense, etc. which can offset some of the L1 bias (see below Kellerman's "psychotypology," etc.). Each of these factors affecting interpretation of L2 syntax tends to restrict the learner's expectations or predictions of meaning in utterances he hears: they are constraints on hypotheses regarding L2 rules of syntax and the application

of rules in utterances.

To sum up, L1 influence is seen as (1) a set of constraints on hypotheses the learner makes in attempting to interpret what he perceives of syntax or phonology; and (2) an L1 bias in the very perception of syntactic or phonological structure in an utterance.

The traditional terminology “positive” and “negative” transfer is most useful when L1 influence is seen in terms of perception and interpretation. The general view I will take is that negative transfer is a function of L2 perceptual *inaccessibility*, and perceptual inaccessibility of L2 forms arises from one or both of two factors:

- (1) the objective abstractness of an L2 form;
- (2) L1/L2 objective dissimilarity by which the learner’s subjective perception skills in L2 are more or less L1-biased, depending on the degree of his skill.

Positive transfer is seen, of course, as the reverse: a function of perceptual accessibility; but positive transfer is far more difficult to trace in terms of perception—for it is difficult to distinguish to what extent correct L2 perception is due to an L1/L2 likeness and not due to the perceptual salience of the L2 form itself. (As Kellerman (1983) says, “interference errors are the most easily visible evidence for L1 influence”). Therefore, although transfer in general is predicted in relation to perception, it is expected that any evidence for or against the predictions will be found in cases of negative transfer.

The hypothesis offered, then, is that (for all areas except phonology) *L1 influence tends to occur, and to persist, in inverse proportion to the perceptual accessibility of L2 forms*. In other words, L2 will develop, and L1 negative bias will recede, on the whole, in the following general direction:

- (1) the perception of word boundaries and word order in utterances;
- (2) the perception of phrase boundaries in utterances together with a growing familiarity with the syntactic make-up of phrases;

(3) the perception of the order of phrases in utterances together with a growing familiarity with typical arrangements of syntactic categories in sentences.

The perception of words and word order in utterances will of course be the least affected by L1 influence. In the area of words, and word order of utterances, and syntax of sentences, words are the most directly perceived (to which we can add a learner's typical expectations of a completely foreign vocabulary, ruling out to a greater extent still his L1 bias).

And, it is predicted that the L1 influence in *interpretation* will play a greater role to the extent that perception is either L1-biased or simply faulty. Difficulty in L2 perception carries with it a likelihood of "imposed" interpretation, which opens the door to an L1 bias in interpretation. This compounds, it is suggested, the tendency of native language influence in both perception and interpretation.

In the following sections, the findings of various researchers are reviewed against the hypothesis.

Points of departure in learning L2 grammar: L2 words and word sequences in utterances

According to the suggestions in Sell (1988), the acquisition of L2 syntactic rules, and its manifestation in, for example, correct word order, follows after familiarity with words and word sequences for the reason that rules are less directly perceived. Development of L2 was traced from the word and phrase levels in utterances to wider generalizations and rules: the "starting point" in L2 syntax development was seen in L2 *words* and word order.

Corder (1983, p. 91) suggests that L2 grammar develops from a simple universal grammar as a starting point. He points out that learners use a simplified grammar in early stages and that this cannot be due to

simplifying L2 grammar “since you obviously cannot simplify what you do not already possess.” His view is that “knowledge of a language is much better thought of as an organically structured whole. In the process of acquiring a language it develops from a fairly simple structure to a highly complex structure in an organic way like a bud gradually developing into a flower. There is no way in which the development of a flower can be adequately described in the form of a linear program. All parts of the structure are developing all the time and nothing is complete until the whole is complete” (p. 89). He argues against seeing language learning “as essentially a cumulative process, one of adding objects to a store” (p. 88).

Adding to what one knows is certainly an important part of learning a new language and gaining in proficiency, however. Apart from the obvious case of vocabulary, the memorization of high frequency word sequences is a requirement for growing towards native fluency and in order to add *instances* of L2 syntax and thus grow in familiarity with rules (cf. Sell 1988). Though Corder suggests that the learner cannot simplify L2 grammar since he does not know it yet, what is ruled out is merely a calculated or intentional simplification of L2. Faulty abilities in L2 perception (due to L1 competence and the consequent L1 bias in perception) can account for “simplified” or impoverished versions of L2 knowledge and proficiency. Japanese students of English omit definite and indefinite articles, or confuse them, due to the fact that the definite/indefinite distinction (though available in Japanese, in the pronoun system, for example) is not expressed in Japanese in articles preceding nouns; plus, English articles offer a low salience perceptually. To cite an example from L1 learning, the inverted-order errors of French children who produce Verb + Subject utterances in their native language is traced in part to “*the low perceptual salience* of the non-stress-bearing clitic subject pronouns *je, tu, il*, etc.,” which are erroneously deleted (cf. Zobl 1983, p. 208; emphasis mine). Also, Gleitman and Wanner (1982)

note more generally that unstressed little words “are approximately as absent as inflectionally functioning auxiliaries (e.g. *will*) and affixes (e.g. *-ed*).”

The impression of simplification of L2, therefore, is due in part to the way a beginning learner handles L2 words—reflecting simply an unfamiliarity with aspects of grammar. L2 content words tend to parallel content words in equivalent L1 sentences and are used more readily than function words which signal grammatical relations, since knowledge of L2 grammar is faulty; function words will often be dropped entirely for that reason (cf. “telegraphese” in Dulay and Burt 1983). Plus, the morphology of content words tends towards “simplified” root forms, for the same reason.

This, again, has its parallel in L1 acquisition. At very early stages, one-word speech is noted in children: “In one-word speech the child will encode only the uncertain or novel information in an utterance situation, leaving the given or presupposed information unexpressed” (Zobl 1983, p. 206, reporting Greenfield and Smith 1976). This is a pre-grammar stage which is followed by word combinations judged by researchers to reflect, in their word order, pragmatic strategies which are bound to the specific situations of the utterances. In due course pragmatic word order gives way to grammatical word order (cf. for example Rutherford 1983, also referred to again below; also see Roper’s “adjustment rules” (1982) which delete unknown elements of a sentence heard by a child, but according to which “only function words may be deleted”).

Though arguments abound in favor of a universal grammar at work in L1 acquisition, these indications from both L1 and L2 learning would argue against Corder’s simplified universal grammar as a point of departure in L2 grammar acquisition.

Selinker, Swain, and Dumas (cf. 1975, p. 143) describe language transfer as “the apparent application of [L1] rules to [L2] forms.” If we include words and memorized word sequences (cf. Sell 1988) within

“forms,” this view indicates much the same idea: that knowledge of L2 rules arrives later and, in the meantime, rule application is prone to L1 bias—as predicted by the hypothesis.

In the direction of morphology, too, words are certainly more perceptibly salient than their internal make-up. Slobin reports that children feel “important semantic concepts should receive independent morphemic status in surface form” (Slobin 1977, noted in Kellerman 1983). This can be taken to indicate that children find full words more easily *perceived* than bound morphemes and therefore more appropriate for assured communication. It has also been noted that knowledge of morphology arrives later than syntax and will vary from one individual to another (cf. Gleitman and Gleitman 1970).

Words (not lexemes nor morphemes) and word-sequences in utterances heard, then, are seen here as the point of departure in the acquisition of L2 morphology and syntax. According to the hypothesis above, this is explained by their high perceptual accessibility (in comparison with generalizations like syntactic categories and morphological analysis) and the *consequent* low effect of potential negative L1 transfer.

The extension of learning into syntax itself also appears to be a function of perception as counteracting potential L1 negative influence. It has been pointed out that development in L2 syntax acquisition may begin at points of similarity to L1, to proceed from there. This is indicated in cases of retardation in which progress halts at the point of similarity (cf. Zobl 1980). I would take this to mean that a point of syntactic similarity will be perceived and interpreted, on the whole successfully, along the lines of the L1 bias: perception will be facilitated by the similarity of form, and confirmed by an L1-influenced interpretation which fits the L2 context. Of interest here is that the first stage in this development lies at a point of maximum perceptual accessibility (made accessible by L1 positive influence) and progress extends to less accessible areas, suggesting that the hypothesis holds. (See also Gleitman and

Wanner 1982 who consider the possibility that an infant is “innately biased to treat intonationally circumscribed utterance segments as potential syntactic constituents”—which would also correlate points of departure in syntactic development with perceptual salience.

Avoiding L2 forms we may closely associate with retardation, just mentioned, the two being mutually reinforcing. Avoidance (interpreted by some authors as a strategy in L2 use), is easily seen as arising from faulty perception. Perception is the condition for L2 “input” to qualify as “intake” and thus contribute to receptive familiarity, productive proficiency, and knowledge of rules (cf. Sell 1988). Avoidance stems from a lack of familiarity, which in turn comes of a lack of perceptive ability regarding the L2 forms in question. If familiarity breeds contempt, avoidance breeds unfamiliarity, which breeds avoidance, which breeds overuse of alternative forms and retardation and fossilization—grave problems, which we can trace to faulty L2 perception skills at the start. Behind the perception problem, of course, is the L1/L2 dissimilarity, in which sense avoidance is an L1 influence, though indirect, which correlates inversely with perceptual accessibility.

As Kellerman says, “the possibility of ‘avoidance’ of L2 features seems to grow as L1-L2 differences grow” (1983, p. 128). And the reason would be in a decreasing perceptual accessibility of L2 as L1-L2 differences grow.

Discourse-level transfer

Two areas of transfer to be mentioned here, quite distant from phonological and syntactic perception, are “discourse accent” and a very specific case of “discourse rhetoric.”

“Discourse accent” is defined by Scarcella (1983) as the use of conversational features (e.g. turn-taking, turn-taking signals, openings, closings) in L2 the same way in which they are used in L1. Scarcella finds

transfer of “conversational features”—topic sequence, back-channel cues (which signal listening attention: “yeah,” “I see,” etc.), and pause filters—in the English of speakers of Spanish. One of her conclusions is that “highly proficient L2 learners never completely overcome their discourse accent in an L2.”

Bartlett (1983) discusses redundancy in the English writing of Navajo and Western Apache speakers, showing convincingly that it is a case of transfer from an L1 technique of rhetorical redundancy. He passes along examples, including the following text by an Apachean speaker:

To have a family is a great thing that could happen to a woman. She will also be loved and respected by her children when they all grow up and when she gets old. She won't be alone all the time. They respect her with great pride for raising them and she will not be neglected. And she will not suffer loneliness. The woman will be in great need of someone who loves her. She will be neglected by other people and will be left alone with things and hard work, that she can't do by herself. She will want somebody to turn to for help. The hard work will make her ill and put her in a bad health condition, if she do the hard work or if it worries her. She will be in great need of someone who loves her. She will be alone and will want some company from a person...

Bartlett explains that the writer “is attempting to persuade the reader that raising a family is a financial as well as an emotional investment for old age. By repeating key lexical items such as *love*, *respect*, *neglect*, *alone*, it seems that she tries to strengthen rhetorically her argument for the institution of family. Notice that an entire sentence (*the woman will be in great need of someone who loves her*) is also repeated in the text.” Remarkable about this text is its overall correct grammar and natural expression at the phrase level.

The discourse level is the furthest removed from direct linguistic perception in the sense that the word, phrase, and sentence levels intervene. In the two examples seen, negative transfer at this level has

outlived that expected at the other levels. And this would appear to confirm the hypothesis that transfer (most evident when negative) tends to occur—and persist—in inverse proportion to L2 perceptual accessibility.

Kellerman's "psychotypology"

According to Kellerman, L1/L2 similarity alone does not account for the presence or absence of L1 influence in L2 acquisition: "... typological similarity will not prove to be an adequately principled basis for the prediction of cross-linguistic effects" (Kellerman 1983, p. 116). Similarity is conditioned by the learner's "perception of language distance" (Kellerman's "psychotypology"): "If a feature [of L1] is perceived as infrequent, irregular, semantically or structurally opaque, or in any way exceptional, what we could call 'psycholinguistically marked,' then its transferability [to L2] will be inversely proportional to its degree of markedness" (Kellerman 1983, p. 117). The transferability of idioms, for example, is noted by Kellerman as low. (See also Adjémian 1983, p. 265, who envisions the learner as actively seeking lexical relatedness which appears to "transcend the defining edges of a single language"—which "are perceived as transferable.")

Within the cognitive framework outlined in Sell (1988), this psychological "markedness" may be seen as an extension of the individual-specific nature of the secondary organization in human cognition. The primary organization, based on direct sensing of an object, is overwhelmingly similar in different individuals of all cultures (a single tree to speakers of English and Japanese is the same even its Japanese label (*ki*) extends beyond the *concept* of 'tree' to an English speaker and takes in a bush). The abstract concept at the intellectual level is likewise similar from one individual to the next—far more similar, certainly, than the *experience* of individuals, which may vary no end. (The

similarity of abstract concepts among people is explained in the Aristotelian tradition by the common, and *knowable*, real world.)

What varies greatly, then, from one individual to the next are *experiences* with realities, and memories of experiences which associate things and events in personal ways, plus personal creations of the imagination. This is evident in our conversations constantly, when speakers' sentences presume a listener's knowledge of the world but ignorance of the speaker's own personal experiences. Typical conversations relay experience and figments of the imagination more than they explain the nature of things. This personalized area of cognition, which corresponds to the secondary organization, is psychologically "marked" as individual-specific, or as group-specific in the case of shared experience.

The case of *language* experience is similar insofar as an *expression* is taken as group-specific: in the jargon of some occupation, for example. And, an L2 learner may consider some L1 expression untranslatable ("marked" in Kellerman's sense) for being too metaphorical, for example, i.e. too removed from direct knowledge of the world. Although falling somewhat outside the scope of the original hypothesis, the "psychotypology" thesis bears out some inverse proportion between L1 influence and the perceptual and cognitive accessibility of real-world objects, events, etc. An L1 expression is judged by the L2 learner to reflect or not a reality accessible (readily knowable) to all people, or only to the L1 community, or to the communities of a certain language typology—where "accessible to all" refers foremost to direct sensing (leading to the primary mental organization), and, beyond personalized experience, to an intellectual understanding of the reality as it is essentially (the third organization).

It is hoped that this interpretation of Kellerman is an indirect confirmation of the hypothesis, which is itself based on a cognitive framework that suggests parallels *in general* between cognition and

language—extended here to a parallel between psychologically “marked” experience-in-general and linguistic experience.

Universals and L1 influence

The operation of universals in L2 acquisition and studies of transfer will be interesting insofar as universals are innate and still operative in the processes of L2 acquisition. Regarding innateness, it still seems to be an open issue whether postulated universals are indeed innate and, if they are, on the other hand, whether some might not in fact be reflections of “prelinguistic” cognitive universals (cf. Gilson 1969, p. 160). Universals which are not innate will be of a more limited interest, in, for example, considerations such as Kellerman’s view on a learner’s assumptions of the transferability of L1 forms to L2.

Linguistic universals at work in the acquisition of L2, for example at the more abstract levels of syntax, would take exception of the thesis of this paper, which predicts an especially strong transfer tendency at that level: The notions NP and VP, for example, are argued by Roper (1982) to be innate. I would like to suggest that linguistic universals may have no role to play in L2 acquisition by adolescents and adults, given the presence of L1.

Let us consider here the notions NP, grammatical sentence-subject, pragmatic topic, and old vs. new information, which are candidates for universality in language and language use. (Note that some of these distinctions are not entirely clear in early L1 use: “To be sure, there is controversy about the nature of the units so sequenced; that is, they might be grammatical units such as *subject*, relational units such as *agent*, discourse units such as *topic* or *old information*”; cf. Gleitman and Wanner 1982.) A tendency towards sentence-initial position (beyond the dictates of input; cf. *ibid.*, p. 22) would be a crucial consideration in L1 acquisition and call for consideration in L2 learning as well.

Roeper (1982) sums up, among other views, a cognitive theory of interaction by which linguistic universals are seen as “reflections of cognitive universals.” And he distinguishes: “At the risk of some oversimplification, we can distinguish two main variants of this position: (1) maturational, according to which linguistic operations are contingent upon prior cognitive operations; and (2) universal, according to which all linguistic operations are direct reflections of cognitive operations.”

The first of these variants accommodates the following type of interpretation in the case of an Aristotelian view of cognition: Insofar as there is “substance-centered” conception of real world things which is universal (arising, for example, from an objectively “substance-centered” real world, as in the Aristotelian substance/accidents dichotomy), and intuitively taken as universal to speakers of any language, the L2 learner, in lieu of a developed L2, can be expected to call attention to an object or an event, etc., nominalize it (in the form of a “substantive,” to note a term from Latin languages for “noun”), and then go on to comment on it; or, to begin with known information, also in nominalized form, which Zobl (1983, p. 207, discussing Fav and Tironzola 1977) says accords with a universal tendency “to order known information before unknown.”

Here the problem of linguistic knowledge and constraints on the form of sentences need only arise subsequent to a (prelinguistic) conceptualized ordering of information, i.e. linguistic competence applies in the nominalization of the object or event as a sentence-subject. The *form* of the nominalization will be language-specific (i.e. L1- or L2-specific, or interlanguage-specific). The *requirement* of nominalization to express a sentence subject may well be universal, but as to whether this is innate knowledge or acquired is hardly clear empirically. In the case of L2 production, transfer from L1 can explain an awareness of such a requirement. Even given, originally, an innate knowledge, this is already actualized in the specifics of L1, in which form it has been exercised time and again by the learner. I would expect more influence from an *actual*

L1 knowledge than from what originally was a *potential* L1 knowledge.

Rutherford (1983, p. 367), for example, discusses topic-to-subject development as universal to L2 learners. He maintains "that all learners, irrespective of mother tongue or target tongue, will choose routes of acquisition that have something in common" (where differences are due to L1 influence). "The commonality side was demonstrated by an aspect of the syntacticization process: interlanguage progression from topic-comment to subject-predicate in the acquisition of sentential subjects by Mandarin speakers and in the acquisition of existentials by mandarin, Japanese, and Korean speakers." Rutherford sees that topic-prominence and pragmatic word order figure directly in *transfer from L1*.

In terms of the original hypothesis, a tendency to nominalize a sentence subject, taken as an L1 influence, is a confirmation: if this tendency is universal, and L1 and L2 contain no counter-examples, the (positive) transfer phenomenon expected would be very extensive. At the same time, the syntactic category, NP, lies at a most generalized level of syntax, with a minimal perceptual accessibility.

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