Reassessing L1 Transfer in Second Language Acquisition Research: New Perspectives

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INTRODUCTION

The role of the native language (L1) in second language acquisition (SLA) has long been a controversial issue. From the 1940s and 1960s, structuralists enjoyed their heyday under the influence of behaviorism in psychology, proposing the Contrastive Analysis Hypothesis (CAH). The major tenet of the CAH was that differences between L1 and L2 cause difficulty in learning the L2. Any difficulties or problems observed in L2 learning were then considered to be attributable to the transfer (or interference) of L1 structures in the L2 learning context. With the emergence of Chomsky’s rationalist position on language acquisition in the 1970s, however, the process of SLA itself was reassessed as a cognitive phenomenon, which cannot be elucidated by exclusively linguistic means as attempted in the framework of the CAH (Long & Sato, 1984).

This newly-emerged cognitivist paradigm in the early 1970s formed the two major hypotheses in SLA. One was the Creative Construction (CC) Hypothesis, and the other was the Interlanguage (IL) Hypothesis (see Faerch & Kasper, 1987). The proponents of those hypotheses argued for the universal autonomous system of L2 as a guiding force of SLA. This view was strongly held by the CC proponents, contending that the learners’ L1 plays a relatively minor role in developing their target language (e.g., Dulay & Burt, 1972, 1973, 1974).

The IL proponents, on the other hand, stressed the learners’ selective use of their L1 knowledge (and other ILs known to them) as well as their forming universal hypotheses about the target language input (e.g., Corder, 1967, 1971; Nemser, 1961; Selinker, 1966, 1969, 1972, 1989, 1992). In other words, they duly recognized the role of the native language. Thus the IL Hypothesis was more widely accepted as a model accounting for the process of SLA, especially in the tutored foreign or second language acquisition contexts, where teachers often witnessed their students relying on their native language. In particular, Selinker’s (1966, 1969) study was one of the first experimental studies in which a statistical analysis was made as to L1 transfer. He systematically compared the following three experimentally-elicited data sources: the

¹This paper is based on Chapter Two of my doctoral dissertation (Takahashi, 1995).
learners' native language, their interlanguage, and their target language. The way of his data analysis is now a basis for studies of L1 transfer in SLA. More importantly, Selinker treated “language transfer” as the process by which L1 knowledge contributes to the shape of the IL system. He then successfully incorporated the psychological presuppositions of the cognitivist paradigm into transfer studies while severing the notion of transfer in SLA from the behaviorism concept of transfer or interference (Faerch & Kasper, 1987). It should be noted here, however, that despite his emphasis on language transfer as a psycholinguistic “process,” the distinctions of “positive,” “negative,” and “neutral” transfers attempted by Selinker (1966, 1969) confuses the issue of “process” versus “product.” There is in fact no need to make the above distinctions as they are clearly product-related assessments (Faerch & Kasper, 1987, Gass & Selinker, 1983; cf. Schachter, 1983). With his approach, then, Selinker did not fully address the issue of language transfer as a “process,” the central claim of the SLA cognitivists.

In the cognitivist paradigm in SLA, however, the role of the learners’ L1 shifted in the late 1970s from a minor role (as argued by the CC proponents) to a relatively influential role. To put it another way, the recent SLA researchers reassessed the significance of L1 transfer in learners’ IL development (e.g., Andersen, 1983; Corder, 1983; Dechert & Raupach, 1989; Eckman, 1977; Felix, 1980; Gass, 1979, 1988; Jordens, 1977; Kellerman, 1977, 1978, 1983; Odlin, 1989, 1992; Ringbom, 1989, 1992; Schachter & Rutherford, 1979; Wode, 1986; Zobl, 1980a; and others). Specifically, their major interest has been away from the questions concerned with the existence or non-existence of transfer, as attempted by Selinker. This is because “that there is transfer is not disputed” (Kean, 1986, p. 80) and “there is no doubt that ... transfer is one of the major factors shaping the learner’s interlanguage competence and performance” (Kohn, 1986, p. 21). The current major concern of SLA researchers is then to attempt to specify the conditions under which language transfer typically occurs or does not occur, i.e., to investigate “transferability,” rather than “transfer.”

In this paper, I will provide a comprehensive review of this current SLA cognitivist paradigm on language transfer (i.e., the one from the late 1970s on) and attempt to make some suggestions for future studies on transferability of L1 features. My attempt here will contribute to SLA research as a whole in view of the recent tendency that fewer researches are getting interested in examining L1 transfer (but probably except interlanguage pragmatics researchers). Lack of their interest in this area might be attributable to their still strong support for the early cognitivist position

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2In order to limit my scope to the transferability studies, an attempt will not be made to review the studies of transfer of “processing cues” carried out within the framework of Bates and MacWhinney's (1981) Competition Model (e.g., Harrington, 1987; Kilborn, 1989; McDonald, 1987; Sasaki, 1991). Furthermore, I will exclusively deal with the studies in the mainstream SLA (i.e., IL phonology, syntax, lexis, and semantics) in this paper.
in the early 1970s or to their failure to grasp the nature of “transferability” studies from the late 1970s on. In either case or whatever else, the reassessment of the notion of “transfer” is a timely attempt to deepen our understanding of the process of SLA.

**TRANSFER IN THE CURRENT COGNITIVIST PARADIGM**

Following Faerch and Kasper (1987), the literature will be reviewed according to the following three dimensions: transferability research on the (1) “linguistic dimension”; (2) “psycholinguistic dimension”; and (3) “nonstructural dimension.”

**Linguistic Dimension of Transferability**

The studies on the linguistic dimension includes those intended to identify the conditions for transfer to occur and the factors which mediate its operation on linguistic grounds. Accordingly, this section will further be divided into the following three sub-sections which may not be mutually exclusive: Developmental sequence, Linguistic markedness, and Non-surface form transfer.

**Studies on Developmental Sequence**

There is considerable agreement among researchers that SLA essentially follows a universal route which is not affected by the factors of age of the learners, learning contexts, or the learners’ L1 backgrounds (see Ellis, 1985; Larsen-Freeman & Long, 1991, for overview). With regard to the degree of effects of the native language on the developmental sequence, however, some SLA researchers argued for its facilitative role; but other researchers contended that the learners’ L1 mostly gives rise to inhibitive effects in developing their IL system. This conflicting view seems to be most prominently reflected in Corder’s (1983) and Krashen’s (1981, 1983) views on the role of the native language in IL development (see Singleton, 1987).

Both Corder and Krashen developed their own arguments in reference to Newmark’s (1966) ignorance hypothesis. According to the ignorance hypothesis, the true cause of interference is “ignorance” of L2 knowledge on the part of the learners. Whenever their target language knowledge is lacking, the learners use certain aspects of their native language to fulfill the L2 communication. To describe this phenomenon, Corder (1983) preferred to use the term “borrowing,” instead of “interference,” because “nothing whatsoever is being interfered with” (p. 92). According to Corder, borrowing

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3Faerch and Kasper (1987) presented “socio-psychological criteria” as the third factor of transferability. In this review, however, Odlin’s (1989) concept of “nonstructural” factors of transfer was adopted to describe the third dimension. This is because it was judged that a wider variety of non-linguistic factors, including “socio–psychological” ones, could be covered with the term “nonstructural.”
is the learners’ gap-filling from L1 knowledge and is strictly a *performance* phenomenon or a communication strategy. However, *borrowing* is also the mechanism which triggers *structural transfer* as a learning process. It follows that learning occurs when successfully borrowed items are eventually incorporated into the learners' IL system. In this view, then, the learners’ native language acts as a “heuristic tool” (p. 95) in the process of learners’ discovering the formal properties of the target language. Corder contended that the learners’ native language especially facilitates the learning of L2 features which resemble the borrowed L1 features.

Krashen’s (1981, 1983) view, however, seems not to go along with Corder’s view on the role of the native language in SLA. By particularly focusing on the Input Hypothesis in his Monitor Theory, Krashen (1983) postulated the notion of “transitional form.” When the comparison of $i$ and $i+1$ in the input shows a gap, the $i+1$ form tentatively becomes a candidate for acquisition. If that form eventually appears in the input, it will be acquired. If it does not turn up in the input, it becomes a “transitional form” and will eventually be abandoned.

According to Krashen, L1 interference (in the syntactic domain) occurs when an L1 rule is used *in place of* some transitional form or mature form of the L2. This shows a similar line of Newmark’s ignorance hypothesis, as claimed by Krashen. Unlike Corder (1983), however, Krashen regarded L1 influence as just “padding” (p. 148) where there are deficiencies in the acquired system. Furthermore, Krashen argued that the adopted L1 knowledge has a delaying or inhibiting effect for acquiring a target form (e.g., fossilization of the preverbal negation rule in the English speech of Spanish speakers). Taken together, then, Krashen’s view is that L1 knowledge is never incorporated into the acquired L2 system; and thus *structural transfer* in Corder’s sense never actually emerges.

While supporting Newmark’s ignorance hypothesis, Krashen also suggested that ignorance is not a sufficient condition for triggering L1 influence. According to Krashen, the nature of L1 influence is “constraints” on the developmental sequence; and this aspect was not addressed in the ignorance hypothesis. Krashen then proposed the following three conditions on transfer based on the current SLA research: (1) *Motivator*: there must exist some force that encourages the learners to rely on their L1; (2) *The state of the L1 rule*: the L1 rule must be productive, frequently used, and potentially language-universal and the L1 donates the “slots” of its surface structure; and (3) *The “crucial similarity measure”*: there should be a sufficient degree of similarity between the L1 and the L2 structure.

Zobl’s (1980a, 1980b, 1980c) studies were among those which made a great contribution to Krashen’s formulation of transfer conditions above. Zobl overall echoed Krashen’s claim that L1 knowledge provides an inhibiting, rather facilitating, effect on learner’s IL development. By maintaining this position, Zobl developed his own argument of L1 influence in SLA.
Zobl (1980a) argued for the "selectivity of transfer," claiming the existence of various developmental and formal criteria for the selective nature of L1 influence. According to Zobl, transfer is selective along the developmental axis. According to this view, learners must attain a certain level of development of L2 structure before transfer is activated. Furthermore, transfer is selective on the formal axis as well in terms of stability (verb types), consistency (word order), and innovativeness (question types) in the learners' IL. The most important point here is as follows: it is L2 structural properties that govern both the developmental sequence (and thus possible developmental errors) and the selective workings of transfer (and thus possible transfer errors).

Based on the above argument, Zobl formulated three theses on the mechanism underlying developmental and transfer errors. Zobl's first thesis states that seemingly L1-influence errors "presumably begin as L2-dependent developmental errors which are subsequently reinforced by an L1 structure compatible with the developmental error" (Zobl, 1980b, p. 470).

As the second thesis, Zobl (1980b, cited in Zobl (1980c)) argued that transfer is promoted when the L1 structure conforms more to the general language acquisition principles (i.e., Slobin's operating principles) than the L2 structure does. According to this thesis, the suppliance of resumptive pronouns by Persian/Arabic learners of English, for example, was triggered by a universal principle of clause processing operating on their L1s when the target language clause was perceptually opaque to them.

Zobl's third thesis claims that, despite a substantial overlap between developmental and transfer errors, the latter may prolong restructuring of the rule underlying the error (Zobl, 1980c). Such prolongation is induced by the use of a common rule in the L1 system and the L2 system, i.e., the developmental stage the learners have achieved (e.g., the Spanish-speakers' protracted use of pre-verbal negation).

The majority of the CC proponents examining the relationship between developmental sequence and L1 influence basically made the same line of argument as Zobl's, in particular, his third thesis. For instance, Wode (1978, 1981, 1984, 1986) claimed that, when a natural developmental order reaches a stage where the L2 developmental

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5With this first thesis, Zobl asserted that Cancino, Rosansky, and Schumann's (1975) suggestion regarding Spanish-speaking English learners' first hypothesis in acquiring English negation is not plausible. Specifically, Cancino et al. understood that Spanish learners of English first hypothesize that negation in English is like negation in Spanish. According to Zobl, however, this first hypothesis is "based on a universal processing strategy operating on L2 input" (Zobl, 1980c, p. 473). L1 influence occurs only after the developmental types are established.
structure is substantially similar to the corresponding L1 structure, the structure in question persists much longer than it would otherwise have done. Hyltenstam (1977) also confirmed the tendency that the learners’ initial ESL learning was impeded when their L1 has pre-verbal negation. Findings similar to Hyltenstam were reported in Fathman and LoCoco (1989). Hence, those SLA researchers lent strong support for a delaying effect of the native language on certain aspects of IL development (see also Gass, 1988; Sharwood Smith, 1983).

Zobl’s third thesis is also consistent with Andersen’s (1983) “transfer to somewhere principle (TTS).” The TTS principle states as follows: a grammatical form consistently occurs in the interlanguage as a result of transfer “if and only if (1) natural acquisitional principles are consistent with the L1 structure or (2) there already exists within the L2 input the potential for (mis-)generalization from the input to produce the same form or structure” (p. 182). As a corollary, Andersen claimed that, if an L1 form conforms well to the developmental processes, it will be transferred to the learners’ IL and will be acquired early; but the transferred form will resist restructuring longer than the form promoted by the natural acquisitional processes.

The transfer studies on the developmental sequence reviewed above showed the direct influence from the learners’ L1. Giacobbe (1992), however, illustrated the case of secondary/mediated transfer in which the native language indirectly constrains the developmental sequence through the process of manipulation and transformation of “transferable” L1 items.

In his longitudinal study of a Spanish speaker learning French as an L2, Giacobbe (1992) found that his subject, Berta, consistently produced verbless utterances with spatial prepositions to convey directional or stative meaning in French. In Spanish, there are two basic spatial prepositions, a (a ‘mobile’ preposition) and en (a ‘stative’ preposition), which allow for verbless utterances in expressing movement and location. In French, there are the corresponding spatial prepositions, a, de, and en. However, French does not permit the independent use of these prepositions without verbs in expressing movement and location. Berta’s verbless utterances in French then might be understood as a result of direct L1 transfer (see also Harley, 1989). However, the Spanish a can also be used in co-occurrence with ir in a verbal construction expressing a path. According to Giacobbe, then, it might be more advisable to understand Berta’s utterances in question as her strategy of simplification in her L2 by dissociating prepositional use from use of verbs in the Spanish L1 system. Giacobbe concluded as follows: Berta perceived the corresponding L1 prepositions to be transferable to L2; but what she actually did was the further manipulation and transformation of the transferable L1 system so that she could rely on her simplification strategy in her IL development.

To recapitulate, the majority of the CC proponents support the view that the learners’ native language is more likely to play an inhibiting and delaying role in the
learners’ IL development. There is also considerable agreement among them as to the following points: (1) the requirement of “crucial similarity” should be met before L1 influence takes place; and (2) transfer and IL developmental processes are not independent forces; transfer operates in conjunction with these processes though the primary force of acquisition is attributed to the natural developmental processes.

Studies on Linguistic Markedness: Typological Universals

 Quite a number of studies have been conducted focusing on the relationship between linguistic markedness and L1 influence (e.g., Eckman, 1977; Gass, 1979; Gundel & Tarone, 1983; Kean, 1986; Zobl, 1982, 1983, 1984, 1989). The general claim of those studies is that linguistically unmarked L1 features are likely to be transferred to the learners’ IL, while linguistically marked features of L1 tend not to be transferred (cf. White, 1987). Some of the studies shed light on the L1 influence on the markedness evaluation procedure on the developmental sequence (e.g., Zobl, 1982, 1983, 1984, 1989). The issue of linguistic markedness, however, was also addressed in the framework of typological universals, notably, implicational universals.6 Implicational universals assume that the presence of one structural property implies the presence of other properties in the same structural domain; and thus a hierarchical relationship is entailed in terms of the degree of markedness. In this section, I will review two representative studies addressing the issue of L1 influence interacting with implicational universals, namely, Eckman (1977) and Gass (1979).

 In his effort to revise the CAH, Eckman (1977) argued for typological markedness as a transferability criterion, proposing the Markedness Differential Hypothesis (MDH). Unlike CAH, the MDH was intended to predict not only the areas of difficulty for L2 learners, but also the directionality and the relative degree of difficulty in acquiring certain L2 features. Eckman defined “markedness” as follows: “A phenomenon A in some language is more marked than B if the presence of A in a language implies the presence of B; but the presence of B does not imply the presence of A” (p. 320). By equalizing “typologically marked” to “being difficult,” then, the MDH predicts the following: the areas of L2 which are different from the L1 and are more marked than the L1 will be difficult, whereas the areas of L2 which differ from the L1 but are not more marked than the L1 will not be difficult. Eckman asserted that the application of his MDH enabled us to successfully predict that it is German learners of English who have more difficulty than English learners of German with respect to the acquisition of voiced/voiceless obstruents of English and German, respectively. Hence, Eckman demonstrated that the learners’ L1 plays a crucial role in determining the direction and degree of difficulty in the framework of the MDH.

6Ellis (1985) noted the following three types of universals: substantive, formal, and implicational universals.
It should be noted here, however, that Eckman’s application of the MDH to Schachter’s (1974) data yielded interpretations conflicting with Schachter’s. Schachter (1974) examined the production of English relative clauses by Persian, Arabic, Chinese, and Japanese speakers. She found that Chinese and Japanese learners produced fewer errors than Persian and Arabic learners did. She attributed the fewer errors observed to the less frequent suppliance of that particular structure by Chinese and Japanese speakers as a result of their “avoidance strategy” induced by L1/L2 structural difference (see Laufer & Eliasson, 1993, for similar findings and interpretation). Eckman, however, interpreted the same data within the framework of the MDH as the following: fewer errors made by Chinese and Japanese learners of English were the result of their L1s’ being closer to English in terms of linguistic markedness on the relative clause accessibility hierarchy (see below details on this hierarchy). Such conflicting interpretations then led us to cast doubt on the validity of the MDH (see also Kellerman, 1979a, 1984; Kamimoto, Shimura, & Kellerman, 1992).

Gass (1979) examined the acquisition of relative clauses by adult L2 learners of English with nine L1 backgrounds. With an acceptability judgment task (for receptive skills) and a sentence combining task (for production skills) as an eliciting technique, she compared the accuracy order for different relative pronoun functions with Comrie and Keenan’s (1979) accessibility hierarchy (AH). The AH shows a universal, implicational hierarchy of positions from which an NP may be relativized without leaving a pronominal reflex behind. Transfer from the L1 was identified for the pronoun retention for the three highest positions on the AH, i.e., the pronoun retention in subject, direct object, and indirect object positions only. According to Gass, however, the results overall indicated that language universals seemed to play a more leading role than L1 transfer in her study. Based on her findings, Gass suggested (for the area of syntax) that transferability is mainly determined by the following three conditions, which interact with language universals: (1) surface structures in L1 correspond to those in L2; (2) the L2 and the transferred patterns manifest a high degree of perceptual salience; and (3) the transferred pattern has a less elliptical structure than the corresponding L2 pattern.

As Gass herself admitted, however, the most crucial weakness of transferability criteria based on linguistic markedness is that L2 learners may not necessarily perceive the hierarchy of markedness in the predicted way. Namely, the point at issue is the “psychological reality” of linguistic markedness (see Faerch & Kasper, 1987; Kellerman, 1978, 1979a, 1983). Comrie and Keenan’s AH is the well established relative clause hierarchy; however, its psycholinguistic validity has not yet evidenced.

**Studies on Non-Surface Form Transfer**

The studies in this section were intended to show that some L1-influenced features
are not amenable to traditional cross-linguistic surface comparison. The studies reviewed here then illustrate how the learners' L1 affects SLA.

Schachter and Rutherford (1979) examined samples of written English produced by Chinese and Japanese-speaking learners. They noted that Chinese students overproduced existential constructions when introducing new referents which served as subsequent topics. It was also found that English extraposition constructions were used almost exclusively by Japanese learners when they made generic statements for future topics. Neither Chinese nor Japanese has the corresponding surface structures. Schachter and Rutherford extrapolated these phenomena as follows: since those two languages are typologically topic-prominent languages, the Chinese and Japanese learners of English considered the particular English surface structures to serve the “discourse function” of their L1s (i.e., being topic-prominent), even though English uses other surface structures for that same function. Hence, they concluded that the observed phenomena represented a transfer not of surface syntax from L1 to L2 but of L1 function to L2 form.

Similar findings were obtained in Rutherford (1983). Rutherford examined the written English samples produced by L2 learners (all proficiency levels) with various L1 backgrounds (e.g., Mandarin, Arabic, Spanish, Korean, and Japanese). He analyzed the data on the following three parameters of language typology: (1) canonical arrangements (SVO); (2) topic-prominence vs. subject-prominence; and (3) pragmatic-word-order (PWO) vs. grammatical-word-order (GWO). Rutherford identified a universal syntacticization process; namely, IL progresses from topic-comment to subject-predicate in the acquisition of sentential subjects by Mandarin learners and in the acquisition of existentials by Mandarin, Japanese, and Korean learners of English. Rutherford, however, also found cases of “typological transfer” for the second and the third parameters of the three mentioned above. As for the parameter of “topic-prominence vs. subject-prominence,” Mandarin speakers’ samples manifested the “extra-heavy” (p. 367) topic-comment influence from their L1. With respect to the parameter of “PWO vs. GWO,” on the developmental continuum from PWO to GWO, the Japanese and Korean speakers overproduced dummy subjects, showing their sensitivity to GWO. Since Japanese and Korean are more heavily GWO, Rutherford concluded that the observed phenomenon was the result of L1 influence. Referring to this L1 transfer by Japanese and Korean speakers, Rutherford argued that this is “an instance of transfer not of mother tongue surface form but of an aspect of mother tongue typological organization” (pp. 366-367). Lastly, Rutherford noted that the two parameters which were subject to transfer were discourse-based, thereby contending that it is “discourse” and not “syntax” that overall contributes to shaping interlanguage.

The non-surface form transfer was also reported by Bartelt (1983, 1989). His data were English written compositions obtained from native Apachean speakers. Bartelt
found a large amount of redundancy in the form of lexemes, phrases, and sentences, which were appropriate to the Apachean norms but not to the English norms. Closer examination further revealed that lexemes with a highly emotional connotation are most likely to induce the Apachean-type rhetorical redundancy. Based on his findings, Bartelt extrapolated that the Apachean learners of English transferred their rhetorical strategy of redundancy because it was perceived to have the same function in their English IL as in their L1.

To summarize, those three studies clearly suggested that, as Schachter and Rutherford (1979) stressed, SLA researchers should be encouraged to investigate the discourse level in order to grasp the dynamic process of SLA. In this sense, the studies reviewed here provide a base for gaining greater insight into "pragmatic transfer."

**Psycholinguistic Dimension of Transferability**

As pointed out earlier, the problem inherent in the linguistic criteria is that they may not be "psychologically real" for L2 learners in their process of transfer. A large number of studies on the linguistic dimension indicated that the "similarity" between L1 and L2 is one of the crucial conditions for transfer to occur. However, "similarity (or typological distance)" as established by SLA researchers does not necessarily manifest the mental representation of "similarity" on the part of L2 learners. While the objective assessment of language distance plays a significant role in determining how transferable a given structure may be, this is not adequate for us to arrive at a deeper understanding on the conditions of transfer (Odlin, 1992). The learners' subjective estimation, i.e., their expectation or belief as to whether a given L1 item is transferable to the L2 context, may give us more insightful information about transfer conditions (James, 1977; Odlin, 1992; see also Meisel, 1983). It ought to be understood, then, that the transfer studies on the psycholinguistic dimension emphasize the learners' own perception of the interrelatedness of L1 and L2.

Several SLA researchers have been exploring the factors which encourage or discourage L1 transfer based on psycholinguistic criteria (e.g., Kellerman, 1977, 1978, 1986; James, 1977; Jordens, 1977; Sharwood Smith & Kellerman, 1989; Sjöholm, 1983, cited in Odlin, 1992; van Helmond & van Vugt, 1984; and others). Among them,
Kellerman’s and Jorden’s studies will be scrutinized below as the representative work in this area.

One of the central constructs of Kellerman’s transferability framework is the notion of “projection.” Projection is the “process of extrapolating from the NL (native language) to produce a supposed TL (target language) sentence on the assumption that the two languages are the same” (Kellerman, 1977, p. 85, parentheses mine). According to Kellerman, the projection from the NL to the TL is based on a “reasoned” prediction, i.e., the learners’ belief as to the relationship between their native language and target language. The basic assumption here is that, even though researchers can identify some errors in the learners’ IL, it would often be hard to recognize them as the errors induced by L1 transfer. If the learners believe that a TL equivalent of a certain NL form can be used in the TL construction, it could be said that the observed error was induced by L1 transfer; if they do not believe like this, the produced error might be a developmental error or a performance error. Kellerman thereby claimed that, although the observation of produced errors provides much information about the learners’ IL, it also presents a potentially false picture of what the learners really do know about the TL.

Kellerman also referred to the notion of “conversion” as the other major construct in his theoretical framework of transferability. Kellerman defined it as follows: conversion is the process of application of “what is already believed to be known about the relationship between NL and TL to the process of projection” (Kellerman, 1977, p. 90). Taken together, the notions of “projection” and “conversion” provided Kellerman with a base for exploring the L1 constraints on IL development.

In his framework, Kellerman defined the transferability of a given structure as “the probability with which it will be transferred to an L2 compared to some other structure or structures” (Kellerman, 1986, p. 36; see also Kellerman, 1983). Note here the probabilistic nature of transferability: a given item A is more likely to be transferable than item B, without having L2 learners make a categorical judgment of whether items A and B are transferable or not transferable to L2 contexts. Furthermore, the goal of Kellerman’s studies was to characterize how the learners’ knowledge underlying performance is developed and how the development of that knowledge is constrained by the L1 (Kellerman, 1986). This position led him to argue for predicting tendencies in language in use, not predicting actual performance of L2 learners.8

Three criteria (conditions) of transferability were proposed by Kellerman: (1) the learners’ psychotypology; (2) psycholinguistic markedness; and (3) the reasonable entity principle (REP) (Kellerman, 1983). Learners’ psychotypology is their metalin-

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8As Sharwood Smith (1979) described, the approach taken by Kellerman and Jorden stresses “internal reorganization prior to transfer” (Sharwood Smith, 1979, p. 351). Namely, they regard the transfer process as the decision-making process; and thus transfer is one of the “strategies” attempted by L2 learners in their IL performance (see also Faerch & Kasper, 1986).
guistic awareness of language distance (Kellerman, 1983).9

A good example of psychotypology influencing transferability would be seen in the contrasting results obtained from Kellerman (1977) and Jordens (1977). Kellerman (1977) set up an experiment to examine how Dutch learners of English at three different proficiency levels would treat Dutch idiomatic expressions translated into English. The learners were asked to judge if the translated English expressions were correct (or acceptable) in English or not. The following results were obtained: the lowest proficiency group tended to assess the Dutch-like idioms as less transferable by rejecting them. The highest proficiency group was, on the other hand, more successful at distinguishing correct English idioms similar to Dutch ones from Dutch-based erroneous idioms. Kellerman extrapolated that this contrasting behavior was the result of the advanced learners’ having acquired real knowledge of L2.

Jordens (1977) adopted the research design similar to Kellerman’s (1977), but using Dutch learners of German as his subjects. In contrast to the results from Kellerman (1977), however, Jordens found the following: first-year Dutch learners with low proficiency in German perceived Dutch-like idiomatic expressions as more transferable to German contexts and failed to distinguish expressions possible in German from those impossible in that language. Second-year learners, however, tended to perceive them as less transferable regardless of their being possible in German. Third-year learners, on the other hand, were able to begin distinguishing between Dutch idiomatic expressions that were possible and impossible in German. Based on this finding, Jordens assumed that the first-year Dutch learners of German could not distinguish those expressions due to a lesser degree of psychotypological distance between Dutch and German. Those learners considered that the two languages were more similar, as opposed to the Dutch learners of English in Kellerman (1977), who perceived a greater psychotypological distance between Dutch and English.

“Psycholinguistic markedness” was defined by Kellerman as the perception of a feature described as “infrequent, irregular, semantically or structurally opaque, or in any other way exceptional” (Kellerman, 1983, p. 117). The transferability of a given L1 feature is determined by the degree of psycholinguistic markedness of an L1 feature. Note here that, unlike Zobl (1980a, 1980c) and Andersen (1983) emphasizing L2 structural properties, Kellerman’s notion of markedness can be established solely based upon L1-specific features independent of L2 (Kellerman, 1983, 1986). If an L1 feature is perceived as more marked, it is less likely to be transferable; if it is

9This factor is operative, for example, in the assessment of the use of English by Finnish-speaking Finns with Swedish as their L2, and by Swedish-speaking Finns with Finnish as their L2 (Ringbom, 1986, 1987, 1989, 1992). Since both groups of Finns perceived English and Swedish to be more similar than English and Finnish, they judged that transfer from Swedish to English would be successful but transfer from Finnish to English would not be.
perceived as less marked, it is more likely to be transferable.

Kellerman (1977, 1978, 1983) further connected the notion of psycholinguistic markedness with the language specificity/neutrality. That is, a more marked L1 feature gives rise to a more language-specific perception (and thus less transferable), whereas a less marked L1 feature results in a more language-neutral perception (and thus more transferable). Note that the "psycholinguistic markedness" then represents the transferability in a narrow sense (Faerch & Kasper, 1987), whereas the transferability obtained from the language-specificity perception is characterized as the transferability in a broad sense. Moreover, while the degree of markedness can be independently established, the concept of language specificity/neutrality is relative in nature and thus subject to L2. In other words, the degree of language specificity is determined by the interrelativeness of the specific L1 and L2 (or psychotypology) and changes with experience in the L2 (Kellerman, 1979b, 1983).

The relationship between transferability and psycholinguistic markedness was empirically validated. Based on the results obtained from Kellerman (1977), Kellerman (1979b) further investigated whether there is a correlation between the transferability and the semantic transparency of L1 idioms. A moderately high correlation coefficient (rho = .502, p < .05) was obtained between these two constructs. Kellerman then concluded that transparency was, in fact, one element used by the learners in deciding an idiom's transferability.

In Kellerman (1978, 1982), the relationship between transferability and markedness (or coreness) was assessed by focusing on the various senses of the polysemous Dutch word *breken* (to break) in English for those senses. Kellerman first obtained the transferability data from the Dutch learners of English: he asked them to mark the Dutch sentences containing the target word if they could be translated into English with "break." Kellerman then measured the markedness/coreness (or prototypicality) and the concreteness of the meanings of the Dutch word *breken*. The rank-order correlation procedure yielded a high correlation between the transferability and the markedness/coreness of the meanings of the Dutch word *breken* (rho = .837, p < .001, two-dimensional solution), but not between the transferability and concreteness of those senses (rho = .129, two-dimensional solution). Similar findings were obtained from Kellerman (1986), in which he investigated the senses of the polysemous Dutch word *oog* (eye) perceived by Dutch learners of English (see also Ijaz, 1986, for similar findings on lexical prototypicality and transferability). In consequence, Kellerman contended that there exists a strong relationship between transferability and psycholinguistic markedness.

With respect to the third transferability criterion, the "reasonable entity principle (REP)," Kellerman (1983) claimed that "in the absence of specific knowledge about the L2, learners will strive to maximize the systematic, the explicit, and the "logical" in their IL" (p. 122). Namely, L2 learners tend to transfer L1 structures which
conform to the "L2 reasonableness assumption" and fail to transfer L1 structures if they do not conform to this assumption. As Faerch and Kasper (1987) suggested, however, this principle ought to be defined relative to a given L2 learning situation: a learner of language A with a native language B might have quite different reasonableness assumptions as compared to a learner of language A with a native language C. Studies on the predictability of transfer based on this principle, however, have not been substantially conducted (but see van Helmond & van Vugt, 1984).

It ought to be noted here, however, that Kellerman's transferability criteria are not flawless. Four problematic points will be raised below. First, it may be hard for the learners to determine whether a given L1 feature is psycholinguistically marked or not (van Helmond & van Vugt, 1984). No L1 features, including idiomatic expressions, are inherently marked or unmarked. As Kellerman noted, markedness is a relative notion: an L1 item A is marked in relation to the other L1 item B, while the same item A may be unmarked in relation to the other L1 item C. In order to carry out a successful markedness assessment, then, the learners have to make endless comparisons with all possible items in their L1.

Second, the learners' belief or expectation as to whether a given L1 item is transferable to L2 context, i.e., "projection," may be influenced or governed by their "knowledge of L2" to some extent. The learners may know the relationship between the L1 feature and its corresponding L2 feature; it is their knowledge that may lead them to "believe" that the particular L1 feature can be used in the L2 context. On the other hand, the successful performance in judgment tasks, for instance, the one performed by the advanced learners in Kellerman (1977), may not necessarily have been induced by the learners' "real knowledge"; some advanced learners may have relied on their own intuition or expectation regarding the L1-L2 relationship.

Third, the way of operationalizing transferability in Kellerman's framework was not consistent across his studies. In Kellerman (1977), he operationalized the notion of transferability with "correctness," i.e., the translated expressions are correct or not in English. In Kellerman (1978, 1982, 1986), however, transferability was treated as equal to "translatability." A further problem here is that "translatability" is highly context-dependent, while Kellerman ignored any possible contextual effects in the transferability or translatability judgments.

The absence of contexts in Kellerman's experiments then constitutes the fourth problem. In fact, Kellerman himself admitted the importance of contexts: "from a pragmatic point of view, an isolated sentence like "the cup broke" is odd, since it requires us to imagine a context in which a cup could break by itself" (Sharwood Smith & Kellerman, 1989, p. 228). Odlin (1989, 1992) further elaborated on this problem as follows: both structure and environment (i.e., social context) may be necessary for any theory of the transferability of idioms. By citing some language
contact situations (e.g., Hiberno–English and Malaysian English), Odlin claimed that a certain idiom may be judged to be transferable from L1 when the hearers in the community share the sociocultural values underlying the idiom with the speakers. Odlin then argued for a crucial role of “social context,” including socio-psychological factors, in shaping a theory of L1 constraints on IL development.

**Nonstructural Dimension of Transferability**

The majority of the transferability studies on both the linguistic and psycholinguistic dimensions have placed much emphasis on the “structural” properties of IL. However, SLA researchers should also investigate what Odlin (1989, 1992) called “nonstructural” factors of transferability. Several SLA researchers echoed this view by stressing L2 learners’ socio-psychological motives and their linguistic proficiency as influential factors for transfer (e.g., Birdsong, 1992; Coppieters, 1987; Faerch & Kasper, 1986, 1987; Kohn, 1986; Meisel, 1983; Meisel, Clahsen, & Pienemann, 1981; Wode, 1986). In this section, a focus will be placed on the examination of how the learners’ socio-psychological orientations and linguistic proficiency interact with the transferability of L1 features.

**Socio-psychological Factors**

Faerch and Kasper (1987) provided three types of socio-psychological factors inducing L1 transfer. The first factor is *group solidarity*. With this factor, ethnic minority groups attempt to mark their group-membership by preserving L1 features in their L2 production. The second factor is *foreigner role*. Faerch and Kasper explained this factor as follows: “by adopting linguistically divergent behavior, speakers clearly mark non-membership in the L2 speech community, thereby protecting themselves from being assessed on the basis of native-speaker norms and expectations” (p. 125). The third factor is *marking origin*: people may attempt to mark the origin of a commodity by preserving L1 features in naming it.

With the socio-psychological criteria of transferability, the findings of Schumann (1978, 1979, 1982), Meisel, Clahsen, and Pienemann (1981), and Meisel (1983) could be substantiated. One of Schumann’s Spanish-speaking subjects, Alberto, failed to progress through the developmental stages of negation. Unlike the other Spanish-speaking subjects, Alberto remained in the first stage throughout the study, using mainly the *no V* form. As Schumann observed, this might be because Alberto felt a great degree of social and possibly psychological distance toward the community of native English speakers. This large social and psychological distance then led Alberto to his heavy reliance on his native language and his failure to progress toward more native-like control of English.

Within the framework of the Multidimensional Model, Meisel, Clahsen, and Pienemann (1981) and Meisel (1983) demonstrated that there exists a universal
developmental sequence (e.g., in the acquisition of word-order rules of German as L2), which is highly constrained by learners' capacity of psycholinguistic speech-processing. This sequence cannot be altered by any factors. Within each stage, however, considerable variation is observed; and such variation could be accounted for by the learners' state of socio-psychological orientation, i.e., segregative or integrative orientations. Segregatively-oriented learners show a more or less negative attitude toward L2 native speakers and are not interested in staying longer in the target-language community. Integratively-oriented learners, on the other hand, are eager to have contact with L2 native speakers by staying longer in the L2 community. If the learners have a segregative orientation, they are more likely to rely on their L1.

**Proficiency Factors**

Kellerman's and Jordens' studies clearly demonstrated that L2 learners' proficiency affects their transferability perception. In particular, the results of Jordens (1977) were insightful because they manifested a U-shaped curve based on the learners' proficiency.

Specifically, according to Sharwood Smith and Kellerman (1989), there are three stages which characterize the U-shaped behavior in language performance. At Stage 1, learners tend to show targetlike performance in some limited linguistic domain. Stage 2 is characterized by performance in this same area which is now deviant (in terms of omission or commission) as compared to the target model and thus different from performance at Stage 1. At Stage 3, those structures present in Stage 1 but to some extent suppressed in Stage 2 appear again. Jordens (1977) substantiated such U-shaped behavior with each of the three stages represented by different language proficiency.

Transfer/transferability studies, however, do not always conform to the above U-shaped behavior with respect to the learners' linguistic proficiency. In fact, the issue of proficiency in relation to L1 transfer has been relatively controversial.

For instance, Taylor (1975) argued that less proficient learners rely more on L1 transfer, whereas errors produced by more advanced learners reflect their strategy of overgeneralization from already-acquired IL features. Beginning learners' reliance on the native language was also evidenced by Takahashi (1984), which was intended to examine lexico-semantic transfer attempted by Japanese learners of English. Takahashi reported that advanced learners were most likely to abandon the L1 = L2 strategy in their equivalence task of Japanese/English lexical items. In the area of phonology, Major (1986) examined the validity of the Ontogeny Model, which claims that transfer errors decrease but developmental errors increase and then decrease chronologically. His longitudinal study of L2 acquisition of Spanish r with four American-English speakers in fact provided strong support for the Model.

claimed that L1 transfer is strongest in beginners and near-natives. Of special concern here is a possible occurrence of L1 transfer in the performance of very advanced L2 learners.

Coppieters (1987) demonstrated that adult native-like non-native (i.e., near-native) speakers developed essentially different underlying grammars from native speakers. According to Coppieters, those near-native non-natives relied on their native language in the areas of basic grammatical contrasts, such as tense/aspects, articles, and pronominal systems, suggesting the impossibility for adult L2 learners to attain native-like competence (but see Birdsong, 1992, for contradicting findings). Similar findings were reported by Flege and Hillenbrand (1984) in their study of the L2 French syllables /tu/ and /ty/ produced by native speakers of American English. According to Flege and Hillenbrand, very advanced L2 learners still had a problem with the pronunciation of an L2 phone which has an acoustically different counterpart in L1 due to their interlingual identification of L1 and L2 phones (see also Flege, 1980, 1981).

In light of the above conflicting findings, more efforts should be invested in exploring proficiency effects on transferability in future research. Additionally, more research into the effects of sociopsychological constraints on transferability ought to be undertaken. The findings of such future studies on the influence of nonstructural factors will surely broaden our knowledge of the nature of transfer and transferability of prior linguistic knowledge.

CONCLUSION AND SUGGESTIONS FOR FUTURE RESEARCH

Within the cognitivist paradigm which emerged as the post-Contrastive Analysis Hypothesis, the interest of SLA researchers in the late 1970s was shifted from the existence of transfer to the conditions under which transfer is likely to occur. Structural "similarity" and "frequency in L1" were raised as crucial requirements/conditions of L1 structural transfer on both the linguistic and psycholinguistic dimensions. Nonstructural aspects of transferability, however, have not been examined substantially.

The above comprehensive review then suggests the following four points be explored in future research. First, as pointed out earlier, the transferability studies on the linguistic dimension have been disregarding the learners' perception of the transferability of the target structures. It would then be more advisable for the researchers to

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10Birdsong (1992) adopted a systematic thinking-aloud technique when the subjects (near-native speakers of French (ENS) and native speakers of French (FNS)) were engaged in their acceptability judgment task. According to Birdsong, ENS subjects "as a group" differed significantly from FNS in terms of cumulative deviance from target-language norms on the acceptability judgment task.
shift their interests from the purely linguistic transferability judgments to the psychological reality of transferability, as attempted in the studies on the psycholinguistic dimension.

Second, more effort should be invested in examining non-surface form transfer. As Rutherford (1983) noted, it is "discourse," not "syntax," that more likely governs the shaping of interlanguage. Future research of this kind would allow us to get access to some cases in which transfer is much more evident in the direction from L1 function to L2 form than in the one from L1 form to L2 form.

The third point is closely related to the second above. Namely, more systematic studies incorporating the notion of "social context" should be explored even at the phonological, syntactic, lexical, and semantic levels, which are traditionally known as "decontextualized."

Fourth, L2 learners' socio-psychological motives and their linguistic proficiency ought to be investigated as potential factors for transfer. In particular, as Schumann (1978, 1979, 1982) and Faerch and Kasper (1987) suggested, the issue of "disidentification" should directly be addressed in future research. By doing this, we could grasp the nature of transfer and transferability observed in more dynamic interactions between people from different cultural and linguistic backgrounds.

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第二言語習得における母語転移研究
—新たな視点を探る—

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1940年代から60年代にかけてのアメリカ構造主義言語学と行動主義心理学の影響下で栄華を誇った対照分析仮説（Contrastive Analysis Hypothesis）は、第二言語習得における母語の役割（母語転移・母語干渉）を最重要視する研究課題であった。しかし、1970年代初頭の合理性的立場（rationalist position）の台頭で次第にその勢力は失われ、代わりに人間の認知活動に焦点を当てた研究基盤（cognitivist paradigm）が打ち立てられた。この新たな研究基盤はさらに2つのグループに分類され、主として北米を中心に創造的構成仮説（Creative Construction Hypothesis）を、そして、ヨーロッパを中心に中間言語仮説（Interlanguage Hypothesis）を第二言語習得研究の新研究課題として提唱する派が結成された。この2つの仮説においても、第二言語習得における母語転移の問題が継続して扱われた。特に、創造的構成仮説支持派は、当初、母語の影響はほとんどありえないとする立場をとったが、1970年代後半になると、第二言語の習得において母語は必ず何らかの役割を果たすとする立場をとるようになった。その多くはどの言語にも普遍に見られる発達過程を第二言語習得の中心過程とする一方で、どのような条件の下でどのような影響を母語が及ぼすかを研究の対象とした。一方、ヨーロッパでは、母語の役割についての学習者自身の知覚に焦点を当てた研究が盛んになった。本研究は、これら70年代後半以降の新しい認知研究の枠組みで、第二言語習得における母語転移がどのように扱われてきたかを概観する。そして、これを基に、今後の母語転移に関する研究課題を考察する。