

15 Cross-Linguistic Influence

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1 Introduction

Researchers interested in cross-linguistic influence have several phrases to choose from in referring to the phenomenon, including the following: *language transfer*, *linguistic interference*, *the role of the mother tongue*, *native language influence*, and *language mixing*. In this chapter, *language transfer* and *cross-linguistic influence* will be used interchangeably, as they are the most commonly employed in contemporary second language research. No single term is entirely satisfactory, however, and linguists have often noted various problems. Cook (2000), for example, observes that *transfer* and *cross-linguistic influence* spuriously suggest some kind of movement. In this chapter, moreover, the drawbacks of the term *interference* will be discussed.

Whatever term is employed, there remains the problem of definition. One characterization is as follows: "Transfer is the influence resulting from the similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired" (Odlin, 1989, p. 27). Such a definition suffices to restrict the area under study, but it says little about just what constitutes "influence." Selinker (1992, p. 208) considers transfer to be a cover term for a number of behaviors which intersect with input from the target language and with universal properties of human language (cf. Dechert and Raupach, 1989; Gass and Selinker, 1993). Much of what is meant by transfer involves "retentions" of one kind or another, as Jarvis and Odlin (2000) observe, yet the notion of retention does not take into account other relevant phenomena such as avoidance and hypercorrection, as well as some of the behaviors associated with the notion of "simplification" (even though that concept is sometimes viewed as diametrically opposed to transfer).

This chapter uses a few terminological conventions that may seem to sacrifice precision, but doing so will avoid some cumbersome phrasing. The term

second language will usually be employed, though one section specifically addresses the problem of cross-linguistic influence in cases where the target is not the second but rather the third language – and in some cases even a fourth or fifth language. Most of the discussion will consider transfer in relation to adult language learners, though again one section will look at younger as well as older learners. Since most research deals with either second language speech or second language writing, the emphasis will be on production as opposed to comprehension, but at a number of points the significance of transfer for listening and reading comprehension will also be discussed.

Several books, collections of articles, and state-of-the-art papers in the last fifteen years or so show that interest in cross-linguistic influence remains strong (e.g., Dechert and Raupach, 1989; Gass, 1996; Gass and Selinker, 1993; Kellerman, 1984, 1995; Kellerman and Sharwood-Smith, 1986; Odlin, 1989; Ringbom, 1987; Selinker, 1992). Moreover, cross-linguistic influence attracts considerable attention from researchers in fields where transfer is not the primary object of study but where it constitutes an important topic: language contact (e.g., Siegel, 1999), second language phonetics and phonology (e.g., Leather and James, 1996), language universals and linguistic typology (e.g., Eckman, 1996; White, 2000), and second language writing (e.g., Connor, 1996). The very plenitude of sources on cross-linguistic influence creates something of a problem. Because so much research is available, anyone seeking to understand transfer itself in all its manifestations needs to try to become familiar with a wide range of linguistic research; neglecting to do so can result in making claims that do not square with the available evidence (as has happened fairly often). The highly diverse evidence for transfer has impeded attempts to develop truly comprehensive theories of cross-linguistic influence. In the more credible attempts at theory-building, researchers have focused on what is admittedly only part of an overall model, as in the characterization of second language speech production by De Bot (1992).

Language transfer affects all linguistic subsystems including pragmatics and rhetoric, semantics, syntax, morphology, phonology, phonetics, and orthography. (As will be seen, some have been skeptical about transfer in syntax and morphology, but such skepticism is unwarranted.) It is beyond the scope of this chapter to deal thoroughly with cross-linguistic influence in each subsystem, though one book attempts to provide such coverage (Odlin, 1989). Instead of looking in detail at each subsystem, this chapter will consider several topics that have remained important over the years, including the methods for determining transfer, the concept of transferability, the age factor in relation to transfer, the notion of typology and universals, and the influence of a second language on the acquisition of a third. There will also be a discussion of a topic less often considered but clearly important for cross-linguistic influence: linguistic relativity. To begin, however, it will help to consider language transfer in historical terms.

2 Weinreich and the Notion of Interference

Some fifty years have elapsed since the publication of Uriel Weinreich's *Languages in Contact* (1953), a work that looked at cross-linguistic influence far more closely than any previous investigation had. Even though Weinreich's scope was not confined to the question of transfer in second language acquisition, his monograph will serve as a useful benchmark for assessing change and continuity in research on transfer. Many historical treatments of the research take Robert Lado's *Linguistics Across Cultures* (1957) as their starting point, but Weinreich's work reviewed many more actual studies of language mixing, and Lado himself invoked *Languages in Contact* as empirical support for the importance of transfer. However, transfer in second language acquisition is only one of the phenomena associated with language mixing, two others being the influence of a second language on one's native language and the influences arising in the coexisting knowledge systems of bilinguals who have (more or less) equal facility with two languages (Odlin, 1989; Thomason and Kaufman, 1988).

Some second language researchers (e.g., Dulay and Burt, 1974) have claimed that *Languages in Contact* does not consider the role that one's native language can play in the acquisition of another language, but more careful readings (e.g., Selinker, 1992) show that claim to be mistaken. Indeed, even while Weinreich expressed a disinterest in applied linguistics, he saw second language research as relevant to his focus on language mixing. With its strong historical orientation, *Languages in Contact* emphasizes patterns of negative transfer, or (to use the term usually found in the book) "interference." This interest in hybridization and interference has probably affected views of transfer in second language acquisition, with many studies focusing on the ways in which a learner's knowledge of a second language may diverge from the target language. In fact, the widely used term *interlanguage* (Selinker, 1972) presupposes some difference between a learner's knowledge and that of native speakers; moreover, research by Nemser (1971), which Selinker has seen as conceptually close to his own, invoked the notion of interference. Researchers have debated whether or not the interlanguage concept is applicable in all instances of second language acquisition, though it is clear that the notion does apply in the vast majority of cases (cf. Selinker, 1992; Sridhar and Sridhar, 1986).

With his emphasis on interference, Weinreich tacitly assumed that negative transfer is inherently more interesting than positive transfer, which can be defined as the facilitating influences that may arise from cross-linguistic similarities. While some second language researchers seem to share Weinreich's assumption, others, most notably Ringbom (1987, 1992), have argued that positive transfer will affect acquisition much more than will negative transfer. The teaching of English in Finland is not very different for speakers of Finnish or speakers of Swedish, yet the latter group of learners generally has a much

easier time with English. As Swedish and English are Indo-European (and Germanic) languages, and Finnish is non-Indo-European, the greater success of the “Swedes” (the term used by Ringbom) seems mainly due to positive transfer, and Ringbom’s research as well as other studies provides many details to support that inference. Given the importance of facilitating effects, it is clear that transfer should not be equated with interference.

Although Weinreich’s emphasis on negative transfer had some unfortunate consequences, his analysis of cross-linguistic influence shows clearly that neither he nor many of the researchers whose work he cites held behaviorist views. This point is important since one of the most common misrepresentations of the intellectual history of transfer claims that the idea of cross-linguistic influence was spawned from behaviorist theories by proponents of contrastive analysis (i.e., systematic comparisons of languages). It is true that some proponents of contrastive analysis assumed that learning a new language largely consisted of acquiring new “habits,” as Charles Fries argued in the preface to Lado’s book. Such assumptions naturally led to a strong reaction when generative grammarians and cognitive psychologists challenged the validity of behaviorist thinking about language (Odlin, 1989). Even so, Weinreich showed considerable skepticism about any psychological models proposed to account for bilingualism and interference, noting that “they vary from one school of psychology to another” (p. 71). While he recognized the importance of ultimately achieving a workable psychological account, the linguistic evidence was what convinced him about the importance of cross-linguistic influence.

3 Transfer in Relation to Linguistic Subsystems

Few if any researchers have ever denied that cross-linguistic influence plays some role in second language acquisition, but skeptics have maintained that transfer matters much more for some subsystems than for others, with phonetics and phonology usually the systems where widespread transfer is conceded, in contrast to morphology and syntax (e.g., Dulay, Burt, and Krashen, 1982). Such claims are sometimes taken to imply that language universals or target language influence matter more in syntax and morphology than in phonetics and phonology, despite considerable evidence for the importance of other factors in addition to transfer in second language pronunciation (Leather and James, 1996; Odlin, 1989). Moreover, such claims presuppose that there exists a reliable way to measure the relative contributions of the native language to the ease or difficulty learners have with each subsystem and, by implication, the total contribution of transfer to the process of second language acquisition. Weinreich’s assessment a half century ago of efforts to quantify subsystem contributions to transfer is worth recalling: “All the cited opinions on the relative amount of borrowing are rather superficial and premature, if they are meaningful at all” (p. 67). Despite considerable progress in

the study of cross-linguistic influence, Weinreich's estimation still holds true. The discussion in this section will focus on certain problems in attempting to gauge subsystem contributions and on related issues such as the importance of transfer for comprehension and production.

A quarter of a century ago, Schachter (1974) noted one of the biggest obstacles to comparing the relative contribution of phonological and syntactic transfer: frequencies of occurrence. Many syntactic structures important to a grammatical system may nevertheless be rare in comparison with the phonemes of a language. Cleft sentences, for example, serve a variety of discourse functions including contrastive focus, as in *It's tomorrow that she arrives – not today*. In a large corpus of spoken English as used by individuals from southern England, Filppula (1986) found less than one cleft sentence used for every thousand words (0.7, to be exact). The infrequency of clefts arises from many factors, one of them being that the syntactic structure is optional in many discourse contexts: in the preceding example, one could also choose to say *She arrives tomorrow – not today*. Such options are rare in phonology; if one has settled on using a particular word – *rabbit*, for example – all the phonemes are obligatory, and the sequence of them is invariant (/rabit/), with the only options being at the sub-phonemic level (where, e.g., one could choose a tap, retroflex, or some other variant of /r/). In the speech of many learners of English and of some bilinguals, it is easy to spot cases of cross-linguistic influence involving /r/ because of its general frequency and the unavoidability of the phoneme in many contexts. On the other hand, the obvious influences related to /r/ should not imply that a less frequent structure such as clefting is never implicated in transfer; in fact, work on language contact in the British Isles suggests that transfer has affected the use of clefting in some regions (Filppula, 1999; Odlin, 1997a). Even so, comparing the importance of transfer related to /r/ and to clefting would be a classic example of comparing the incomparable.

In instances such as /r/ and clefts, meaningful quantitative comparisons seem dubious, and the prospect seems even worse in cases where learners fail to use a structure and where failure arises from a cross-linguistic contrast. Transfer and simplification are often thought of as distinct phenomena, but it is becoming increasingly clear that the absence of, for example, obligatory prepositions in a learner's interlanguage can often have something to do with the learner's native language. Jarvis and Odlin (2000) found frequent cases of zero prepositions in the written narratives of speakers of Finnish who watched a silent film, as in the sentence *C[harlie] C[haplin] and the woman go to sit the grass*. The absence of *on* or *in* before the phrase *the grass* might be viewed as simply the lapses of non-native speakers of any language (or even of native speakers) were it not for the fact that a comparable group of students whose native language was Swedish never omitted the preposition. The difference in performance here is directly related to the difference between Swedish and Finnish, with the former language employing prepositions much the same way as English does and with the latter language using a much larger set of options to indicate spatial reference, most importantly, inflectional morphemes.

With regard to prepositions, then, their absence can have a great deal to do with the native language, but quantifying this factor in relation to other transfer phenomena seems nigh impossible.

The similarity of the prepositional system of Swedish gives native speakers of that language a tremendous advantage in learning English, as does the much greater amount of cognate vocabulary. For speakers of non-Indo-European languages (including Finnish), countless hours must be spent in trying to remember English words having little or no similarity to those of their native languages. By the same token, learners whose native language is English will find virtually all non-Indo-European languages to be much harder than Germanic and Romance languages such as Swedish or French. This point may seem obvious, but one implication is well worth stressing. The advantage that cognate vocabulary confers can allow learners to take advantage of positive transfer to increase their comprehension of the target language with far greater ease, thereby freeing many cognitive resources for other language learning tasks (cf. Ringbom, 1992).

It is difficult to quantify the advantage that easier listening and reading comprehension can give to speakers of similar languages, and thus the difficulty increases further still for anyone wishing to measure the relative contributions of, for example, phonology and syntax. Should such measurement be taken with more emphasis on speaking than on listening – or vice versa? Should advantages that accrue to new readers and writers of a target language similar to their native language count for more or for less than advantages in oral skills? Such questions remain quite difficult to answer.

4 Predicting Cross-Linguistic Influence

Whether transfer is positive or negative, the similarities and differences between languages have naturally led teachers and researchers to make predictions. Both in Weinreich's *Languages in Contact* and in Lado's *Linguistics Across Cultures*, similarities are judged to help language learners and differences to hinder them. The challenge of making sound predictions has become increasingly evident, however, and critics of contrastive analysis have emphasized cases where cross-linguistic comparisons fail to predict actual difficulties and where difficulties predicted do not always materialize (cf. Gass, 1996; Odlin, 1989). A detailed study of perception and production by Nemser (1971) showed how complex the issues can be even at the phonetic level. The Hungarian learners he tested usually perceived the English voiceless interdental fricative /θ/ as a voiceless labiodental (/f/), but the same individuals produced a voiceless apical stop (/t/). A different sort of predictive difficulty is evident in a study by Giacobbe (1992), who observes that a Spanish-speaking learner of French named Berta did not quickly use motion verbs that are cognate in Spanish and French (e.g., *va*, "goes"), but she did latch on to prepositions that were cognate (e.g., *a* and *de*) to express ideas involving motion. Even though

contrastive analysts might not necessarily see it, Berta clearly saw, however unconsciously, a chance to draw on spatial prepositions in her native language to express motion concepts in an interlanguage that diverges significantly from the native as well as the target language.

Another problem in making sound contrastive predictions is that different individuals may pursue different options, as is evident in the study of spatial reference by Jarvis and Odlin (2000) mentioned above. In writing a summary of part of the film *Modern Times*, some Finnish speakers chose to write *sit to the grass* while others used *sit on the grass* and still others *sit in the grass*. Finnish can be seen as an influence on all three choices (as well as on the omissions of prepositions discussed above) since there are different case inflections that correspond to each preposition even while only the latter two choices are target-like. In contrast to the Finnish speakers, comparable groups of Swedish speakers never chose *sit to the grass* (and there is no corresponding Swedish collocation). Accordingly, any sound contrastive prediction must take into account the reality of individual variation in interlingual identifications, that is, in what any particular learner may view as similar between the native and target language.

As many examples in this chapter will show, cross-linguistic influence can surface in a wide variety of ways. Accordingly, generalizations about the importance of transfer with regard to a particular structure or, even more, an entire subsystem seem risky at best. In effect such generalizations constitute predictions about when transfer will or will *not* occur (the latter type of prediction often termed a *constraint*), and without a thorough look at all the possible ways that transfer might manifest itself, prognostications about occurrence or non-occurrence can often go wrong. The domain of bound morphology can illustrate vividly the myriad ways that one language can influence another. Jarvis and Odlin (2000) note that cross-linguistic influence might involve actual phonological forms or simply the semantic structures represented by the form; it might involve either production or comprehension, or both; it might involve inflectional as well as derivational morphology or simply one or the other; and it could involve either positive or negative transfer. To make highly accurate predictions about bound morphology, then, will depend on understanding how transfer can work in a wide range of ways (e.g., positive or negative transfer involving comprehension vs. positive or negative transfer involving production). In light of the complexity of the issues, it seems unlikely that researchers will achieve such a detailed understanding any time soon.

5 Interlingual Identifications and Learner Perceptions

As the complexity of second language research has become ever clearer, there might seem little that has remained constant in the study of cross-linguistic influence. However, Weinreich, Lado, and other structuralists recognized the

importance of language distance, a concept that has enduring importance for the study of transfer. Which will take longer for an English speaker to learn to do: read this morning's news in a newspaper written in French or in one in Chinese? To most educated people, the answer is obvious, and the response will not likely change significantly if some other task is alluded to in the question (e.g., understanding the morning news in a television report or carrying on a conversation about the news with a friend). Some might argue that it is mainly a common cultural heritage that will make French an easier language for English speakers. However, even while cultural distance obviously matters, language distance matters even more, as is evident in Ringbom's comparison of Finnish-speaking and Swedish-speaking students in Finland. Ringbom (1987) stresses the great cultural similarity of these two groups of learners yet also the very different degrees of success in learning English.

Although Weinreich used the notion of the interlingual identification to focus on negative transfer, the notion also works well for understanding positive transfer in cases such as Finland: Swedish learners generally have the advantage of being able to look for cross-linguistic similarities that their native language affords them. Having such opportunities, however, does not guarantee that any particular learner will do the necessary looking or come to the right conclusion about just how congruent a cross-linguistic correspondence is. Weinreich repeatedly stressed that any language contact is mediated in a bilingual's mind, thus recognizing the difference between the abstract comparison of languages and the behavior of actual people.

Much of what is called cross-linguistic influence depends on the individual judgments of language learners and bilinguals that there exist certain cross-linguistic similarities. In cases where the judgments are accurate, the transfer is positive, but regardless of their accuracy, the judgments are by definition subjective. One of the most important insights about transfer research in the last half century has been the observation by Kellerman (1977, 1978) and others that learners can sometimes be highly skeptical that they should take advantage of what is in fact a bona fide similarity between the native and target language, as will be discussed below. Kellerman's results show the importance of subjectivity in any assessment of cross-linguistic similarity, and, not surprisingly, such subjectivity is related to background factors such as age, motivation, literacy, and social class (Odlin, 1989). These factors and others combine in myriad ways that make the learning situations of virtually all individuals unique – and also make contrastive predictions even more subject to qualification. As will be seen, this subjectivity has crucial implications for a number of issues related to transfer, such as the role that a second language may play in the acquisition of a third.

Although learners sometimes do not take advantage of similarities that would lead to positive transfer, the successes documented by Ringbom show that they often do – to the point where, he notes, the Swedes sometimes get complacent about the relatively small distance between Swedish and English. The ease of making interlingual identifications (including incorrect ones) no doubt

arises from similar psycholinguistic routines available to native speakers as they attempt to cope with variation in their own language, be it involving dialect or register differences. The likelihood that such routines are similar or even the same in bilingual settings supports Schachter's contention (1993) that there is nothing unique in second language acquisition about language transfer. Many linguists have observed that the difference between a language and a dialect often arises on sociohistorical grounds instead of on structural ones (e.g., Chambers and Trudgil, 1980; Ferguson, 1959; Haugen, 1966; Joergensen and Kristensen, 1995), and the competence needed to deal with variation in any context makes the routines inherent in the interlingual identification available in monolingual as well as bilingual settings.

So far, the discussion has referred to cases where learners recognize at least the possibility of making an interlingual identification, whether or not they actually choose to do so. In cases where learners fail to notice a cross-linguistic parallel, the consequence will often be something other than cross-linguistic influence, according to Gass (1996). She points to evidence indicating that universal meaning-based strategies will be invoked when no grammatical parallels seem to exist. This explanation could account for much of the similarity seen in early interlanguage development in cases of naturalistic second language acquisition (e.g., Klein and Perdue, 1997). Even so, it would be mistaken to view all cases of simplification as unrelated to the native language of a learner; the zero prepositions discussed earlier in this chapter suggest that the difference between Finnish and English sometimes impedes learners in forming accurate hypotheses about the target language.

Moreover, two other behaviors will sometimes indicate cross-linguistic influence: avoidance and hypercorrection. Schachter (1974) attributed the underproduction of English relative clauses by speakers of Chinese and Japanese to the very great differences between the target and the native languages in relativization. In contrast to those learners, speakers of Arabic and Persian, languages more like English in their patterns of relativization, did not avoid using relative clauses even though these speakers produced more errors than did the Chinese and Japanese speakers. Schachter interpreted the infrequent use of relative clauses as evidence that learners were avoiding the English structure, though this interpretation has been disputed by Kamimoto, Shimura, and Kellerman (1992). While the results in the Schachter study do indicate a significant difference in patterns of production between the Chinese and Japanese speakers, on the one hand, and Arabic and Persian speakers on the other, more than one explanation might work, including some notion of simplification like that mentioned for zero prepositions. Whether or not the students in Schachter's study deliberately tried to avoid using relative clauses, there are unambiguous cases of avoidance involving taboo forms (Haas, 1951), and they will be discussed later in this chapter. Along with avoidance, hypercorrection can sometimes be attributed to cross-linguistic influence even when no overt form in the native language is directly responsible, as seen in an example involving spelling hypercorrections (Odlin, 1989, p. 38).

A final caveat concerning interlingual identification is that even when learners discover and try to use a real similarity between the native and target language, they may be unwilling or unable to assess just how sound their judgment is. Such an inability would presumably explain the relative clause errors made by Arabic and Persian speakers in the Schachter study. The difficulty of noticing cross-linguistic differences may be especially acute in the area of pronunciation. Flege (1999) and others have repeatedly stressed the difficulty that learners confront when they hear a sound phonetically similar – but not identical – to one in their native language (cf. Leather and James, 1996). Evidence by Bongaerts (1999) discussed below suggests that overt training can help learners to overcome such perceptual difficulties, but it seems that interlingual identifications will often sacrifice details that matter for anyone interested in a nativelike pronunciation of the target language.

6 Methods and Sources

Second language researchers have made considerable progress in the last thirty years or so in establishing methods to determine whether cross-linguistic influence has played a role in some particular acquisition situation. Two methods have proven to be especially important. One relies on comparisons of the use of a particular structure in the native language, the target language, and the interlanguage, with this approach having been successfully used by Selinker (1969). The second approach relies on a comparison of how learners with two (or more) native languages do with regard to a target language structure present in one NL but absent in the other; this method is well exemplified by Mesthrie and Dunne (1990) and Master (1987). After a closer look at the two methods, there will be a discussion of the approach taken by Jarvis (2000), who argues for the need to employ both methods along with additional refinements.

The logic of the approach taken by Selinker is evident in his investigation of word order in the English interlanguage of native speakers of Hebrew. In interviews with school children he found a frequent placement of adverbs in structures that correspond more closely to Hebrew than to English, as in the case of *I like very much movies*, as opposed to *I like movies very much*. Having also interviewed native speakers in Hebrew and native speakers in English, Selinker was able to make statistically significant associations in a number of structures where the interlanguage data resembled the word order of Hebrew more than the word order of the target language. It is also noteworthy that Selinker went to great lengths to ensure that the discourse contexts of the interlanguage speakers and of the native speakers of Hebrew and English would be highly comparable.

In cases where researchers have access to interlanguage data from two or more groups of learners who are similar except in terms of their native language, the opportunity arises for comparing how distinct structural patterns in the native languages may lead to different outcomes reflecting language

transfer. One striking example of differing interlanguage structures comes from a study rarely cited in second language research (Mesthrie and Dunne, 1990). The individuals studied were speakers of South African Indian English and had either an Indic or Dravidian language as the mother tongue. Mesthrie and Dunne focused on relativization patterns partly because the native languages show very different ways of forming relative clauses. Indic languages use correlative constructions whereas Dravidian languages rely on clauses that premodify a head noun. The authors provide the following examples from Gujarati, an Indic language, and Tamil, a Dravidian:

- (1) Gujarati:
 Je veparii marii sathe avyo, te veparii
 CORRELATIVE businessman me with came that businessman
 Harilal ka bhaaii che
 Harilal of brother is
 The businessman who came with me is Harilal's brother.
 (Literally, "Which businessman came with me, that businessman is
 Harilal's brother.")

- (2) Tamil:
 Taccaan aṭicca vannaan cenneki
 carpenter.nom beat.past.rel part washerman.nom Madras.
 poonaan
 dat go.past.3sg.masc
 The washerman whom the carpenter beat went to Madras.
 (Literally, "The carpenter-beat(en) washerman went to Madras.")

The correlatives *je . . . te* in the Gujarati example function somewhat like forms such as *either . . . or* and *neither . . . nor* in English (which does not, however, use such forms to make relative clauses). In the Tamil example, the closest parallel in English is the occasional clause that can occur before the noun modified as in *a-never-to-be-forgotten-experience*. In South African Indian English, two structurally different interlanguage patterns of relativization appear in the speech of less proficient individuals (the square brackets are inserted to allow for easy identification in the Dravidian example):

- (3) Indic:
 But now, which-one principal came here, she's just cheeky like the other one.
 "The principal who arrived recently is just as stern as the previous one."
- (4) Dravidian:
 People [who got working-here-for-them] sons, like, for them nice they can stay

"It is nice for people who have sons [who are] working for the company, since they are allowed to stay on in the barracks."

The structural contrast between the Indic and Dravidian native languages emerges rather clearly in such examples, with the contrast thus suggesting a strong likelihood of cross-linguistic influence. Mesthrie and Dunne find that other sources besides transfer account better for certain other relativization patterns seen, but their evidence indicates that Indic and Dravidian influence frequently affects the clauses of speakers not especially proficient in English.

It might be possible to argue that such clear cases as the Dravidian example make comparisons with Indic patterns unnecessary; using Selinker's approach, one could conceivably compare the frequency of such patterns in Tamil with those in South African Indian English and in turn with those seen in a native-speaker variety of English. Even so, the comparison of the interlanguage with the native and target language has certain limitations, especially with regard to positive transfer. If the NL and TL show little or no difference in some structure common to both, any pattern of positive transfer should not differ much, and any actual difference in interlanguage patterns in such cases will not automatically say much about transfer (though it might well prove interesting for understanding other factors in second language acquisition). One case illustrating the methodological problem is in the use of definite and indefinite articles. Speakers of languages using these structures might or might not have an advantage in using articles in a new language (e.g., a Spanish speaker learning English). Certainly, researchers sympathetic to contrastive analysis might take any success to indicate positive transfer, but skeptics might argue that any success results simply from acquisition strategies common to first and second language acquisition. Clearly, the way to resolve such an impasse is to compare learners whose languages have articles with learners whose languages do not. One detailed look at speakers of different languages in this regard is work by Master (1987), and the results indicate a very clear advantage for the learners whose languages have articles. Other research to be mentioned later in this survey corroborates Master's findings.

Apart from articles, several other structural points have shown a difference in success depending on the presence or absence of a structure in the native language. In addition to the Mesthrie and Dunne study, there are other convincing investigations of relativization (e.g., Gass 1979; Hyltenstam, 1984; Singler, 1988), word order (Bickerton and Givón, 1976; Jansen, Lalleman, and Muysken, 1981), nominal case prefixation (Orr, 1987), spatial expressions (Ijaz, 1986; Jarvis and Odlin, 2000; Schumann, 1986), phrasal verbs (Sjöholm, 1995), causative constructions (Helms-Park, 2001), use of overt subject pronouns (White, 1985), existential constructions (Schachter and Rutherford, 1979), and lexical tones (Gandour and Harshman, 1986). Moreover, at least two studies show that speakers of Romance and Germanic languages show greater understanding of English vocabulary than do speakers of non-Indo-European languages (Ard and Homburg, 1993; Ringbom, 1987). Still other areas showing

differences between native language groups are the pragmatics of apologies (Olshtain, 1983), the ability to recall kanji forms in written Japanese (Mori, 1998), and the metalinguistic recognition of a learner's native language in writing errors (Odlin, 1996). The differences between native language groups is also evident at the global level. As noted earlier, Ringbom (1987) finds that Swedish speakers generally have an easier time with English than do Finnish speakers, and Elo (1993) comes to the same conclusion in a study of the acquisition of French by Swedish and Finnish speakers: once again, the former were more successful.

The two different methods discussed so far have different strengths. The approach employed by Selinker requires a quantitative analysis of the native language and the target language as well as of the interlanguage variety under study, in contrast to other studies (e.g., Master, 1987) which identify a source-language pattern relevant to transfer but which do not always focus on how the patterns actually work in the native language. On the other hand, the approach used by Selinker could not work to demonstrate positive transfer beyond a reasonable doubt. Clearly, there are methodological advantages to be gained by employing both approaches in the same investigation. Jarvis (1998, 2000) argues that the most convincing evidence for transfer will demonstrate three characteristics: intra-group homogeneity, inter-group heterogeneity, and similarities between native language and interlanguage performance. The second of these criteria is more or less the same as seen in the method used by Mesthrie and Dunne and by Master comparing learners with different native languages. Likewise, the third criterion characterizes the method employed by Selinker comparing native language and interlanguage patterns. In addition to combining the two methods, Jarvis stresses the importance of intra-group homogeneity. One expectation implicit in this criterion is that there will be internal consistencies in what learners do in their native language and in their interlanguage. Although Jarvis's approach constitutes a major methodological advance, there remains some uncertainty as to whether it is as feasible for studies of comprehension as it is for ones focusing on production. In any case, how Jarvis applies these criteria in his own research is evident in box 15.1.

The methods exemplified in the studies of Selinker, Jarvis, Master, and Mesthrie and Dunne (as well as many others) have shown that it is possible to subject claims about cross-linguistic influence to rigorous tests. Such testing has often indicated language transfer to be at work, and the reality of the phenomenon is undeniable even though much remains to be understood. Nevertheless, many discussions of transfer do not rely on such methods but instead use data based simply on comparisons of an interlanguage structure with something in the native language. In such cases, claims that transfer has – or has not – taken place may be indeterminate, as when, for example, Spanish learners of English use double negators: for example, *I didn't see nothing*. Since the native language translation equivalent has two negators (*No vi nada*), a claim about cross-linguistic influence is plausible. However, there remains the possibility that *I didn't see nothing* reflects the influence of a non-standard

Box 15.1 Jarvis (1998, 2000)

Research question: What is the effect of the native language on learners' lexical choices?

Jarvis (1998, 2000) investigated using methods employed by previous researchers but also adding refinements that make his conclusions all the more credible. His procedures follow straightforwardly from the three criteria for identifying transfer discussed in this chapter: intra-group homogeneity, inter-group heterogeneity, and similarities between native language and interlanguage performance. Other strengths of the study include: (i) a large sample size from a very appropriate population to study, (ii) a use of the same materials employed by other second language researchers, and (iii) a clear account of the methods he used, which will enable future researchers to conduct either replications or parallel studies with other groups.

Methodology: Focusing on the acquisition of English in Finland, Jarvis was able to compare two groups of learners not very different culturally, but quite different in terms of language, Finnish being non-Indo-European and Swedish being Germanic as well as Indo-European (and thus historically rather close to English).

Subjects: Jarvis recruited 537 students in Finland, their ages ranging from 11 to 16, and also 98 native speakers of American English of about the same ages. Through random sampling, he distinguished four groups, each of 35 learners, whose native language was Finnish (the "Finns") and two groups of 35 whose native language was Swedish (the "Swedes"). In addition he had three groups of native speakers of Finnish writing in that language, as well as two groups of native speakers of Swedish writing in their mother tongue, each group having 22 individuals. The native speaker sample was likewise pared down to three groups, with 22 pupils in each.

Task: One complicating factor in studying the acquisition of English in Finland is that Finns usually study Swedish and Swedes Finnish, and the design Jarvis used considered that, as well as the number of years of English that learners had had. He also wished to compare the effects of the native language in production and in comprehension, so there were three different tasks: a written description of part of the Charlie Chaplin film *Modern Times*, a vocabulary listing test (to measure productive vocabulary), and a vocabulary recognition test. The written task required everyone to provide a narrative of the film, with about a quarter of an hour allowed.

Results: The results of this investigation of transfer indicate all of the following: intra-group homogeneity, inter-group heterogeneity, and similarities between native language and interlanguage performance. One problem Jarvis encountered was that the lexical choices of pupils writing in their native languages were not always very different. Thus, for example, both groups often referred to a bakery truck by the same kind of denotation, *auto* ('auto') in the case of the Finnish writers and *bil* ('car') in the case of the Swedish writers. Accordingly, such convergences make the performance of the Finns and Swedes sometimes hard to distinguish. When, for example, a Finn wrote *a woman stoles bread from a car*, the use of *car* probably reflects the use of *auto* in Finnish, but Swedes used the same lexical item as in *She stoled bread into a car*. On the other hand, distinct lexical forms sometimes surfaced. One event in the film involves a collision in the street between Charlie Chaplin and Paulette Goddard, and students writing in Swedish often referred to the event with one of

two different verbs, *krocka* ('crash') and *springa på* ('run on'), whereas those writing in Finnish overwhelmingly chose *törmätä* ('crash') and almost never *juosta* ('run'). In the English of the Swedes, several learners are apparently influenced by *springa på*, as in *She run on Charlie Chaplin*. As this verb–particle construction was never used by the Finns, its frequent appearance in the English of the Swedes strongly argues for cross-linguistic influence.

Conclusion: The theoretical framework that Jarvis adopted was prototype research, and he argues that his findings on inter-group differences support a relativist notion of conceptual transfer. Both relativism and prototypes will be discussed elsewhere in this chapter, but here it will suffice to note that Jarvis and Odlin (2000) have employed similar methods with the same database of Finns and Swedes to examine issues related to morphological type, spatial reference, and transfer, and Jarvis (2002) has used a similar approach in a study of the acquisition of articles.

variety of the target language, and it may also be that natural principles of language acquisition are at work (Odlin, 1989). In such a case it would clearly help to look at what kind of target language input learners hear and also to compare how often speakers of another language use double negation. Without those methodological improvements, claims that Spanish is or is not involved remain inconclusive.

Although the Spanish example shows the risk of making inferences based simply on cross-linguistic similarity, not all comparisons lead to such indeterminacy. An uncontroversial case of cross-linguistic influence is seen in the so-called *after* perfect still common in Ireland and some parts of Scotland, as in the following example from Sabban (1982, p. 155), *I'm after forgetting all that lot now*, which is equivalent to *I have forgotten all that now*. The individual whom Sabban recorded was an elderly native speaker of Scottish Gaelic, which uses a very similar perfect construction signaled in part either by *an déidh* or *air* ('after'), with equivalent forms used in Ireland, *tar éis* and *i ndiaidh*. For virtually all researchers, the *after* perfect is the result of intensive language contact in centuries past when many speakers of Irish and Scottish Gaelic were learning English as a second language (Filppula, 1999). What makes this case different from the Spanish example is, first, the fact that no dialects of English outside of the Celtic regions use the construction, and second, the fact that *after* perfects are not all common in the interlanguage verb phrases of speakers of other languages as they acquire English. Since neither target language influence nor universal principles (which would presumably lead to widespread use of the structure) can explain the *after* perfect, the cross-linguistic similarity here constitutes strong evidence for transfer.

The methods used by Selinker and the other researchers cited in this section rely on statistical comparisons, but cases such as the *after* perfect show that powerful evidence can come simply from the presence of a structure in the

speech or writing of a distinct population of learners and, very crucially, its absence in groups whose native languages have nothing analogous. The *after* perfect is compatible with Selinker's assertion that there should be a close resemblance between the native language and the interlanguage, and the occurrence of the *after* perfect in a distinct population allows for an implicit comparison with the transfer patterns of speakers of other languages where the structure is absent (Odlin, 1989). When such implicit comparisons are possible, then, they provide strong evidence of transfer. This point is an especially important one because a great deal of language contact research does not – and sometimes cannot – use statistics.

Evidence from language contact research requires careful interpretation for any real contribution to the study of transfer (cf. Odlin, 1992). As noted above, much of the evidence discussed by Weinreich deals with issues other than second language acquisition. Moreover, historical linguists have often suggested alternative explanations besides cross-linguistic influence for the ontogeny of particular characteristics in a language. Even so, the vast number of encounters between speakers of highly different languages and the countless cases of naturalistic acquisition at many points in history make it unwise to ignore the insights about transfer to be found in language contact research. Many studies of pidgins and creoles have identified likely cases of substrate influence (i.e., influence from the native language or some other previously learned language), and some creolists have found much in common in the findings of research in their field and in second language acquisition (e.g., Mufwene, 1990; Siegel, 1999). Indeed, Mufwene (1998) has argued that pidginization and creolization, which creolists usually view as highly distinct phenomena, often amount to cases of second language acquisition. Whether or not pidgins and creoles always qualify as second language varieties, much of the creolist research strongly suggests the transferability of structures which are not so often discussed in the mainline journals for the field called second language acquisition, such as the inclusive/exclusive distinction in pronoun categories (Keesing, 1988) and serial verb constructions (Migge, 1998). Apart from the issue of transferability, creolist research can obviously contribute to understanding the topic in the next section, the importance of social factors in transfer research.

The evidence for cross-linguistic influence takes many forms not only because of the wide range of geographic and social settings but also because of the different kinds of data collection that researchers have engaged in, resulting in a highly diverse array of clues about how transfer can operate. The studies run a gamut from recordings of speech in naturalistic settings to highly controlled experimental procedures, and no single data collection procedure will necessarily provide better evidence about transfer. Speech samples might seem to offer the best data in many cases, but inferences about positive transfer based only on speech will likely underestimate the facilitating effects arising from large numbers of shared words in languages such as English and French. Moreover, some syntactic structures are comparatively rare, as noted above, yet

they may still be highly significant for understanding transfer. Such infrequency, however, can lead to interpretive problems. If the only way to get evidence about transferability comes from the analysis of linguistic intuitions, there can be room for doubt as to whether the intuitions obtained have any relation to actual positive or negative transfer in production or comprehension. When possible, the most convincing evidence will come from multiple sources: spoken and written performances as well as responses to measures of perception, comprehension, or intuition.

7 Language Transfer and Social Setting

All language acquisition takes place in a social matrix, and so it will be useful to consider some of the social factors relevant to transfer. Not all conceivable background factors will play a role in cross-linguistic influence, but some clearly do make a difference. For instance, in research focusing on semantic influences from the target as well as the native, Pavlenko (1999) found that the use of words related to the notion of privacy by Russian–English bilinguals varied according to whether they were living in Russia or in the United States. Looking at differences correlated with social class, Schmidt (1987) found that variation in Arabic consonants affected the consonants used by learners of English. In a study of transfer in West Africa, Chumbow (1981) found there to be more influence from African languages among learners who did not live in cities. The homogeneity of bilingual interlocutors also appears to be a powerful factor in confirming learners' hypotheses about what the target language is like, and cross-linguistic influence can often arise, as Singler (1988) found in comparing the relativization patterns of two groups of speakers, one fairly homogeneous in terms of the native languages that they spoke, and the other not. Somewhat similarly, Mesthrie (1992) saw the social isolation caused by apartheid as a contributing factor to the patterns of syntactic transfer seen in South African Indian English.

Social factors can also account for certain discrepancies seen in transfer research, as is evident in the case of idioms. Kellerman (1977) found Dutch learners to be skeptical about the possibility of using Dutch idioms in English even though there are sometimes word-for-word correspondences, as in the case of *to have victory in the bag*. However, Sridhar and Sridhar (1986) criticized Kellerman's claims about the non-transferability of idioms, arguing that in countries such as India and Nigeria, speakers often create idioms in English based on ones in their native language. On the other hand, results similar to those of Kellerman have also been evident in studies conducted in schools in Syria and Finland (Abdullah and Jackson, 1998; Sjöholm, 1983). Odlin (1991, 1989) has suggested the discrepancy in such results has to do primarily with social context. The historical language contact situation in Ireland resembled that of India and Nigeria, since English was once a language spoken by only a small but dominant group. In Holland, Finland, and Syria, English has never

played a role comparable to what it has in Nigeria or India or to what it had in Ireland (before becoming the native language of virtually the entire population). The Irish case also differs from those in Holland, Finland, and Syria in that many Irish learners acquired English in a naturalistic setting (Odlin, 1997b).

It thus appears that formal language instruction often makes students wary about cross-linguistic correspondences. By the same token, schooling and literacy conventions can affect the stance that learners take in writing in a second language, as seen in work in contrastive rhetoric (e.g., Connor, 1996). Although researchers and teachers have sometimes taken too literally the impressionistic observations of Kaplan (1966/84) about discourse patterns across cultures, there are in fact numerous differences in the conventions of written language (usually considered the domain of contrastive rhetoric) as well as in spoken language (usually considered the domain of pragmatics). There will later be attention given to implications of pragmatic differences, but the focus now will be on written conventions as reflections of differing patterns of socialization.

Differences in literacy conventions can be hard to characterize accurately; societies such as China with long traditions of literacy have varied at different times on, for example, the desirability of questioning a past authority (Bloch and Chi, 1995). Nevertheless, only some strands of the tradition may affect individual learners – and the variations in instruction may account for differing views of the importance of contrastive rhetoric (e.g., Connor, 1996; Mohan and Lo, 1985). While there is a need in this field for comparative research of the kind outlined by Jarvis (2000), the evidence already available points to yet another area where learners' social background matters a great deal. Just as the diary studies by linguists have yielded useful insights about transfer (and some will be discussed below), certain accounts of becoming literate in a new language indicate the great difficulty occasioned by different conventions of written discourse in the native and target languages. Shen (1989, p. 465) describes how he finally succeeded in learning to write in a new language – and only after he had learned to distance himself from the conventions that he had been taught:

The change is profound: through my understanding of new meanings of words like "individualism," "idealism," and "I," I began to accept the underlying concepts and values of American writing, and by learning to use "topic sentences" I began to accept a new logic. Thus, when I write papers in English, I am able to obey all the rules of English composition. In doing this, I feel that I am writing through, with, and because of a new identity . . . I am not saying that I have lost my Chinese identity . . . Any time I write in Chinese, I resume my old identity and obey the rules of Chinese composition such as "make the 'I' modest" and "Beat around the bush before attacking the central topic."

Not all writers in a second language may have such a strong sense of changing identities. However, Shen's experience indicates that native language literacy practices can indeed affect the hypotheses that learners may have of discourse

in the target language, and that those practices have the potential to interact with cross-linguistic influence involving rhetoric, pragmatics, and other linguistic subsystems.

8 Constraints on Transfer

Discussions of language transfer have often invoked the notion of constraints, but not in identical ways. The most global notion is Schachter's (1993) characterization of transfer itself as a constraint on the hypotheses that learners will formulate about the target language. More often, however, there have appeared claims about localized constraints on cross-linguistic influence, as in the above-noted claims about the non-transferability of idioms. Moreover, researchers have sometimes believed that other structural characteristics are not transferable, most notably basic word order (Rutherford, 1983; Zobl, 1986), bound morphology (Eubank, 1993/4; Krashen, 1983), and what are known in Universal Grammar as "functional projections" (Vainikka and Young-Scholten, 1998). Such claims have not proven true in all acquisition settings, however. There are cases of basic word-order transfer (Odlin, 1990), and likewise bound morphology is not always immune to cross-linguistic influence (Dušková, 1984; Jarvis and Odlin, 2000; Orr, 1987; Sulkala, 1996). The problem with the recent claim about functional heads will be discussed in the section on language universals.

Any highly generalizable claim about constraints must hold true for all social settings (and there is, of course, the difficulty of determining the full range of such settings). On the other hand, there is also a problem in claiming, as Thomason and Kaufman (1988) do, that there are no constraints at all, their assertion a reaction to unsuccessful attempts to formulate constraints. In fact, Thomason and Kaufman consider markedness a constraining factor, although they do not say much about just how markedness functions in that capacity (cf. Eckman, 1996).

Regardless of how many or how few constraints there may be, it will help to consider the notion of constraint itself. As noted above, much of what is considered cross-linguistic influence depends on interlingual identifications, that is, the judgments that something in the native language and something in the target language are similar. Accordingly, a constraint could be anything that prevents a learner either from noticing a similarity in the first place or from deciding that the similarity is a real and helpful one. Furthermore, constraints might involve general cognitive capacities including perception and memory, or they might involve principles of language either totally or partially independent of other human capacities. Although the existence of some kinds of constraints seems probable, there remains much uncertainty about how many kinds of constraints there are or what their exact nature is.

Two of the most interesting attempts to elucidate constraints have looked at interactions between linguistic and general cognitive capacities. The Transfer

to Somewhere Principle (Andersen, 1983) focuses on the conditions that will induce learners to make interlingual identifications, while the Transfer to Nowhere Principle (Kellerman, 1995) considers how cross-linguistic influence can occur even when there might seem to be no basis for an interlingual identification. The Transfer to Somewhere Principle draws on earlier thinking on cross-linguistic influence and is compatible with notions of "congruence" as expounded by Weinreich (1953) and others. Andersen articulates the principle in the following very general form: "Transfer can only function in conjunction with the operating principles that guide language learners and users in their choice of linguistic forms to express the intended meaning" (1983, p. 180). While this statement intentionally has few specifics, Andersen elaborates on the principle through a close look at several operating principles, that is, heuristics, identified by Slobin (1973) as crucial for children acquiring their native language, including these: (i) "pay attention to the end of words"; (ii) "pay attention to the order of words and morphemes"; (iii) "avoid interruption or rearrangement of linguistic units"; and (iv) "underlying semantic relations should be marked overtly and clearly." These and other principles (which Slobin has added to over the years) seem to provide children with a way to look for cues in the input. Although the heuristics focus on linguistic structures, Slobin sees them as closely related to a more general cognitive system that matures and enables children's thinking and perception to tune into language.

Andersen accordingly examines Slobin's operating principles for evidence of their importance in second language acquisition. In a look at a number of case studies he finds that both positive and negative transfer can occur when learners perceive (however unconsciously) some cross-linguistic similarity consonant with the operating principles. For instance, he compares a 5-year-old Spanish-speaking girl named Marta with a Japanese-speaking girl of the same age named Uguisu for their success with each of the following English structures: articles, copulas, auxiliaries, plural morphemes, the prepositions *in* and *on*, and the possessive inflection in words such as *brother's*. Marta showed earlier success than Uguisu on all of the structures except for *on* (and Uguisu showed no greater success with that preposition) and the possessive inflection. All of the structures that Marta found easy meet the following criteria established by Andersen: they are frequent, they are more or less transparent in meaning, and they are congruent between English and Spanish. Other factors (e.g., phonetic similarity) help with some but not all, and no factor seems to give Uguisu any advantage except with the possessive inflection, which is congruent with a possessive morpheme in Japanese. In effect, then, Marta is able to take advantage of cross-linguistic similarities that conform to cognitive principles involving ease of perception and interpretation. Drawing as it does on notions of cross-linguistic congruence as a condition for transfer, the Transfer to Somewhere Principle has a commonsense appeal. On the other hand, there are problems. For one thing, the exact conditions for congruence in any given acquisition setting may not always be clear, especially since the

very number of principles deemed important by Slobin is large yet perhaps incomplete. Moreover, individuals may vary in terms of which principle has priority in any given context.

Kellerman doubts the applicability of the Transfer to Somewhere Principle in all cases, and he proposes a complementary Transfer to Nowhere Principle, which states that "there can be transfer which is not licensed by similarity to the L2, and where the way the L2 works may very largely go unheeded" (1995, p. 137). Kellerman cites two types of cross-linguistic contrasts to illustrate where his principle may apply. In the first instance, he summarizes a discussion by Slobin (1993) of work on Panjabi learners of English sponsored by the European Science Foundation. These learners appear to equate progressive verb forms of English with forms in Panjabi marking imperfective aspect. In contrast, Italian speakers in a related ESF project were accurate in marking English verbs for tense and made relatively little use of progressive forms. Slobin and Kellerman attribute the Panjabi speakers' choices to the influence of their native language, in which tense is considered to play a less important systemic role than aspect. The second example cited by Kellerman involves contrasts between verbs in Dutch and English indicating space and motion (e.g., the cognate pair *brenghen* and *bring*). Semantic differences between such verbs lead to learning difficulties for English-speaking learners of Dutch and Dutch-speaking learners of English. Along with Slobin, Kellerman espouses a mildly relativistic view to account for difficulties in both the Panjabi and Dutch cases: "learners may not be able to capitalize on cross-linguistic correspondences because some types of 'thinking for speaking' [a term used by Slobin] may be beyond individual awareness" (1995, p. 143).

Although Kellerman intends Transfer to Nowhere to complement Transfer to Somewhere, it seems possible to consider the examples he offers as instances where the latter principle does in fact apply. In the first example, the equivalence made between progressive forms in English and imperfective forms in Panjabi seems explainable through an analysis of progressive aspect as a subcategory of an imperfective category that may underlie the aspectual systems of all human languages (Comrie, 1976). Thus, Panjabi speakers might well consider the English progressive a "somewhere": in fact, other research indicates that learners frequently make interlingual identifications between categories of tense, aspect, or modality in their native language and categories showing only a partial semantic overlap in the target language (e.g., Ho and Platt, 1993; Klee and Ocampo, 1995; Wenzell, 1989). In the case of the Dutch-English cognates, there is an even clearer cross-linguistic correspondence, and so it would be surprising if learners did not make interlingual identifications. If Kellerman's principle really can cover cases not understandable as Transfer to Somewhere, it will be necessary to offer other examples of "unlicensed" cross-linguistic influence.

The Transfer to Nowhere Principle may prove to be superfluous, but the issues raised by Andersen, Kellerman, and Slobin will no doubt reappear in one form or another. There most probably are "natural acquisition principles,"

but their exact character remains incompletely understood. On the other hand, language-specific characteristics may interact with cognition in ways that make it more difficult for learners to notice differences between the native language and target languages.

9 Transfer, Fossilization, and Multiple Effects

Schachter (1988) has argued that two characteristics of second language acquisition make it substantively different from the acquisition of a first language: transfer and fossilization. The latter term can be defined informally as the cessation of learning, although just how researchers can demonstrate either partial or total cessation is problematic, as is the psychological or social reality of the phenomenon for highly proficient individuals (cf. Long, this volume; Selinker, 1972, 1992; Selinker and Lamendella, 1981; Sridhar and Sridhar, 1986). Whatever the difficulties related to the concept, there is little question that learners often do not become proficient in the target language and that several factors contribute to learner difficulties, one of them being transfer. The apparent permanence of foreign accents is perhaps the most salient – but not the only – indicator that cross-linguistic influence contributes to fossilization.

Like transfer, fossilization is probably best understood as a cover term for a variety of factors which in this case result in the cessation of learning. Selinker (who earlier coined the term *fossilization* itself) has recently considered how various factors interact and has posited a “multiple effects principle”: “It is a general law in SLA that when two processes work in tandem, there is a greater chance for stabilization of forms leading to possible fossilization” (1992, p. 262). He also advances the following corollary: “In every instance of the multiple effects principle, language transfer will be involved” (1992, p. 263). In a closer look at this corollary, Selinker and Lakshmanan (1993) discuss strong and weak versions, the latter formulated, accordingly: “language transfer is a *privileged* co-factor in setting multiple effects” (1993, p. 198, emphasis in the original). The strong version posits transfer as a necessary co-factor, but later in the article Selinker and Lakshmanan suggest that only the weak version is tenable.

Their discussion of transfer includes diverse examples that indeed suggest the interaction of cross-linguistic influence with other factors. Citing instances from Dušková (1984), they note that Czech learners of Russian use bound morphology from their native language as in the interlanguage form *rabotnice* (“workwomen”), with the suffix (-*nice*) differing from the target language suffix (-*nicy*) in the Russian *rabotnicy*. Even while the stem of the equivalent Czech word, *pracovnice*, is different, the suffixes of the native language and interlanguage forms are identical. Selinker and Lakshmanan see three factors at work in producing such forms: (i) transfer; (ii) the existence of numerous cognates in Czech and Russian; and (iii) learners’ perceptions that the two languages are more similar than Czech and English are (Dušková did not

find learners using suffixes such as *-nice* in their English). Another example given by Selinker and Lakshmanan comes from the investigation of inter-language word order of Hebrew speakers discussed earlier. Learners frequently placed adverbs that normally do not directly follow the verb, as in an example discussed above: *I like very much movies*. Similar factors are also seen to be at work in this instance, including transfer (post-verbal adverbs being common in Hebrew) but also the fact that English allows many adverbs to occur in initial, medial, and final parts of clauses.

These and other instances considered by Selinker and Lakshmanan are certainly intriguing, but they also raise a number of questions. In the Czech example, the second and third of the multiple effects are arguably just pre-conditions for language transfer, although in the Hebrew example, the target language itself may contribute to learners' difficulty. One question, then, that these examples bring to mind is just what factors may interact under the Multiple Effects Principle. This question does not necessarily argue against the significance of the Multiple Effects Principle, but it does suggest that second language researchers are not yet in a position to specify the exact conditions under which fossilization occurs or just how transfer interacts with it (see Long, this volume).

10 Universals, Typology, and Transfer

As much of this chapter has already shown, the study of transfer intersects with many other concerns in linguistics, and work on what is termed *Universal Grammar* has given considerable attention to certain areas where cross-linguistic influence may operate. Most UG researchers do not make transfer their primary concern, but many recognize its importance; moreover, their abiding interest in trying to understand, within a Chomskian framework (e.g., Chomsky, 1995), just how much (or how little) first and second language acquisition will overlap has led to numerous studies that seek, among other goals, to determine if transfer has affected particular patterns of acquisition.

Second language research within the UG framework has normally focused on the question of whether or not learners have access to Universal Grammar. In the last two decades, universalist research in the Chomskian tradition has attempted to identify universal principles and language-specific parameters (which are often typologically relevant to many languages) that constrain the hypotheses learners will formulate about what the target language could be like. If universal principles (or related technical constructs such as features and projections) are available to learners, there will be at least some overlap between first and second language acquisition, with certain innate principles putatively available to all learners. On the other hand, if there is little or no access to the principles (because of maturational or other factors), specific parameters (e.g., word order or the use or non-use of pronouns) may steer second language acquisition in ways not seen in the language learning of

children. If parametric variation does play a major role, it could interact with universal principles or it could operate largely independently of them, but either way, language transfer has been a real concern of UG researchers.

In the large and growing body of research on these issues, highly diverse positions have emerged. White (2000; see, also, White, this volume) identifies five approaches, four of which envision some role for cross-linguistic influence: (i) full transfer/partial access; (ii) no transfer/partial access; (iii) full transfer/full access; (iv) partial transfer/full access; and (v) partial transfer/partial access. As she acknowledges, even this range does not adequately capture the diversity of positions on the issues. For one thing, there exists another position one might take, “no transfer/no access” – and in fact, some work goes in that direction (e.g., Meisel, 1997). All of the five positions contrasted above, however, do envision some role for UG, and all but the second envision some role for transfer.

The expanding range of positions on the access question departs from earlier tendencies in the literature to characterize transfer and access in absolute terms. Apart from the “no transfer/no access” position, the most opposed stances are the first and second, and variants of them have long been part of the UG literature. The “full transfer/partial access” position maintains that UG is available to learners but only as instantiated in whatever ways the learner’s native language may reflect UG principles (e.g., Bley-Vroman, 1989). Conversely, “no transfer/partial access” has held that the principles of UG that a learner has access to are not mediated by the native language at all but instead are accessible directly through acquisition just as these principles presumably are in the acquisition of the first language (e.g., Flynn and Martohardjono, 1994). Research for some two decades has led to many conflicting results; not surprisingly, then, many researchers are now unwilling to espouse all-or-nothing positions. As White (2000) suggests, it is certainly conceivable that some but not all UG properties would be accessible. Moreover, research both in and outside the UG tradition suggests that there are some kinds of constraints on cross-linguistic influence, even though specifying the nature of the constraints has proven very difficult.

Research in the UG framework covers a fairly wide range of structures and raises a host of issues, some more relevant to the study of transfer than others. Accordingly, it seems best in a survey such as this not to address any one specific approach (e.g., “full transfer/full access”), but rather to consider some issues that will be of lasting importance regardless of whether any one approach continues to shape much of the research landscape in the future. Even if any particular UG approach is misguided (or, indeed, the overall Chomskian framework is so), problems that arise in interpreting the research will no doubt continue to be problems for transfer researchers for a long time. Two especially important concerns – and interrelated ones – are the nature of parameters and the scope of Universal Grammar.

The notion of “parameter” can be defined fairly succinctly, as in the following gloss in an introductory textbook: “*Parameter* A universal dimension along

which languages may vary" (O'Grady, Dobrovolsky, and Aronoff, 1993, p. 589). It is easy enough to give examples of parameters, and often the illustrations involve cross-linguistic contrasts, as in the case of a word-order property where English and French differ:

- (5) Louise mange toujours du pain.
 Louise eats always bread
 *Louise toujours mange du pain.

As Haegeman and Guéron (1999) note, English adverbs normally precede a verb in cases where they would immediately follow the verb in French (though, of course, many adverbs in both languages can also appear in clause-initial or clause-final position). As a contrastive description, the one given here is no better or worse than many outside the UG tradition. However, most if not all parameters are generalizations that necessarily ignore exceptions, and these exceptions may matter for the study of transfer. The following sentences all come from users of the Internet (emphases added):

- (6) I remember *vaguely* some of the threads on the Forum, and that they . . .
 (7) Read *carefully* everything received from the Office of Admissions . . .
 (8) . . . you must understand *thoroughly* the major ideas and concepts . . .

The position of each adverb in relation to the verb constitutes an exception to the generalization of the parameter described by Haegeman and Guéron. No doubt various explanations can be given to account for such exceptions, and they do not invalidate the cross-linguistic contrast. However, if an English-speaking learner of French says *Lisez soigneusement* ("read carefully"), the word order might reflect cross-linguistic influence even though the pattern departs from the native language parameter. Such a case could alternatively result from simply a correct apprehension of the target language pattern, and to demonstrate positive transfer it would be necessary to use a method such as described above, that is, to contrast learners' performances with those of a group of learners whose native language never allowed an adverb to appear right after a verb. The example here does not invalidate UG research on adverb placement, but it does show that language-specific influences may not always be synchronized with native language parameters even in areas focused on in Universal Grammar.

Some parameters such as word order have long gotten attention in the literature (in some cases, long enough to generate controversy over just how to define the parameter). Exactly how many parameters there are in any language remains an open question, and it is likewise not certain just what the scope of a parameter is in any adequate description of a language or in an account of how the parameter is (or is not) acquired. The parameter of aspect

illustrates the boundary problem of the relation of Universal Grammar to other areas of linguistics. Slabakova (1999) discusses this parameter in relation to syntactic properties such as double objects and verb-particle constructions. Whatever the merits of her specific analysis, it would be mistaken to conclude that the cluster of properties studied is all that is relevant to aspect. Whether or not the notion of parametric variation applies well in this case, aspect has semantic and pragmatic dimensions that matter a great deal in second language acquisition (Andersen and Shirai, 1996; Bardovi-Harlig, 1992). Moreover, there is good evidence for aspectual transfer in a number of studies outside the UG framework (e.g., Ho and Platt, 1993; Sabban, 1982; Wenzell, 1989).

Most UG researchers acknowledge that there are domains relevant to language acquisition beyond Universal Grammar, and it is not unusual to find statements such as the following: "UG is not a comprehensive theory of the acquisition process; many other factors enter into the language-specific instantiation of principles and parameters" (Flynn and Martohardjono, 1994, p. 319). Even so, this world beyond sometimes impinges on the claims of UG researchers, as in one made by Vainikka and Young-Scholten (1998) about functional projections, an important concept in recent UG research: "there is evidence that in L2 development these projections are not available for transfer. Thus the development of functional projections in L2 acquisition is very similar to what has been observed in L1 development" (p. 29).

The terminology in this claim may obscure its sweeping nature. If it were true, a number of function-word categories such as the article would be acquired with no significant influence from the native language. There is, however, abundant evidence that learners whose languages have articles often do avail themselves of real cross-linguistic correspondences, thus leading to a great deal of positive transfer (e.g., Andersen, 1983; Dulay and Burt, 1974; Jarvis, 2002; Kempf, 1975; Master, 1987; Myers, 1992; Oller and Redding, 1971; Ringbom, 1987; Shannon, 1995). It should go without saying that to ignore research outside the UG framework is to run the risk of making empirically unsound claims.

In all probability, researchers will not decide soon on the exact relation between the concerns of Universal Grammar and concerns in other areas of second language acquisition. However, two points made elsewhere (Odlin, forthcoming) are relevant here: (i) the significance of transfer for SLA does not stand or fall on the access issue; and (ii) research on Universal Grammar deals with only a subset of possible language universals, and accordingly there remains a need for universalist research looking beyond the issues raised by UG theorists. With regard to the first point, it is worth mentioning four areas largely outside of UG that clearly matter to many transfer researchers as well as to language learners and teachers: phonetics, cognate vocabulary, pragmatics, and literacy. Fortunately, there is a considerable work in all of these areas (e.g., Connor, 1996; Kasper, 1992; Leather and James, 1996; Schweers, 1993).

With regard to the second point, some transfer research has considered language universals and linguistic typology but not in the UG framework (e.g., Eckman, 1996; Wolfe-Quintero, 1996). The study of typology has had a

life of its own outside the Chomskian tradition (e.g., Givón, 1984; Tomlin, 1994), as has the notion of linguistic innateness. A great deal of typologically oriented research assumes that communicative needs play a key role in shaping the grammatical options that characterize any language. Not surprisingly, such assumptions have often been challenged by generative theorists (e.g., Gregg, 1989). In any case, typological research outside the UG framework has also led to interesting insights about transfer. For example, work by Clark (1978) on existential and possessive constructions provided the basis for a study of transfer patterns in the English of a native speaker of Cambodian (Duff, 1993). Many languages of the world do not make the kind of distinction that English does between verbs of possession (as in *have*) and verbs predicating existence (as in the construction *There is*). Such is the case with Cambodian, and Duff provides a longitudinal analysis of the changes in one speaker's interlanguage from a stage where *has* serves as both an existential and possessive marker to one where it marks possession, but not existence (the form *has* being much more frequent in the data than *have*).

Duff notes another change evident in the development of separate ways of expressing existence and possession: the use of overt syntactic subjects becomes more and more common. Like Chinese, Cambodian does not have a category closely comparable to that of subject in English where syntactic phenomena such as agreement often depend on what the subject of the clause is. Accordingly, languages such as Cambodian and Chinese are sometimes designated "topic-prominent" languages in contrast to "subject-prominent" languages such as English (e.g., Rutherford, 1983). A study by Jin (1994) indicates an interesting case of bi-directional symmetry. Just as speakers of Cambodian find it difficult to acquire an overtly marked subject category, speakers of English learning Chinese have difficulties at first in suppressing overt subjects in their interlanguage. The studies of Duff and Jin suggest that the interlingual identifications made by learners can draw on either communicative categories such as topic (as in the Duff study) or formal categories not closely tied to a particular communicative principle (as in the Jin study). Whatever learners can notice in their native language, whether formal or discourse-functional, seems to motivate interlingual identifications in such cases.

Although discourse-functional studies and UG research aim at understanding different parts of the human language capacity, both have drawn on facts in other fields, not only from linguistic typology but also from what is sometimes termed prototype research. In the last fifty years or so, thinkers in several fields have questioned whether linguistic and general cognitive knowledge can be adequately represented in the classical notions of categorization that assume that every category has a set of necessary and sufficient conditions (e.g., Lakoff, 1987; Rosch, 1973). In contrast to such characterizations in which every member of a category has the same status, characterizations by prototype distinguish core from peripheral members of a set (as where, for instance, a robin is considered a more typical kind of bird than is a penguin). One of the earliest examples of the application of prototype analysis to second language

research comes from work by Kellerman (1978) looking at the intuitions of native speakers about the transferability of sentences such as *Hij brak zijn been* ("He broke his leg") and *Zijn val werd door een boom gebroken* ("His fall was broken by a tree"). The judges generally considered sentences such as the former to be more transferable, the use of *break* in such cases being closer to a core meaning of the Dutch-English cognate *breken/break*, as Kellerman determined through a test of native speaker intuitions about the senses of the Dutch verb *breken*. What makes these intuitions especially interesting is the fact that even though both of the above sentences are acceptable in Dutch and English, notions of centrality appear to affect what learners regard as transferable. Kellerman's results, then, show how important it is to take into account the judgments of actual learners and not rely simply on a contrastive analysis.

The cognates *breken/break* constitute a case where there exists an extremely close correspondence (even though learners often do not see it that way). However, the value of prototype research for transfer is also evident in studies involving languages less similar than Dutch and English. Since most cross-linguistic correspondences are rougher than the case of *breken/break*, it is necessary to determine whether learners speaking different languages will agree on what the core meanings of a target language word are. Evidence that they sometimes agree comes from a study by Ijaz (1986) of the use of English spatial terms by native speakers of Urdu and German. Both groups responded similarly to cloze test items, such as *Two watches are ____ the table*, to which both non-native groups, as well as a group of native speakers, nearly always supplied the preposition *on*. In this instance, using *on* conforms to the prototypical sense characteristics of static contact from a vertical direction. In contrast, the test item *The keys are hanging ____ the hooks* elicited very different responses. Native speakers of English, Urdu, and German all chose *on* in many cases (especially the first group), but other responses were common in this context, which involves a more peripheral sense of *on* (contact from a horizontal direction). Along with *on*, another acceptable response that some individuals in all three groups chose was *from*, but non-native speakers sometimes chose spatial terms influenced by their native languages. In the case of the Urdu speakers, *with* was often selected, whereas some German speakers chose *at*. Non-central instances thus elicited considerable negative transfer.

The notion of core and periphery has also been used to study the acquisition of grammatical structures, as in the case of tense and aspect (Andersen and Shirai, 1996). Similarly, the notion of markedness often overlaps with notions of prototypes, with less marked structures being closer to the core and more marked ones closer to the periphery (cf. Eckman, 1996). In the most ambitious characterizations, linguists sometimes posit a core and periphery in language itself (e.g., Cook, 1994). Along the same lines, some second language researchers have argued that there exists a Basic Variety (more or less a core interlanguage) in all cases of naturalistic acquisition (Klein and Perdue, 1997). Needless to say, the wider the scope of the claim, the more details there are that require explanation, and in the broadest claims, it is far from clear what

role language transfer should have. Universalist research, including work on the so-called Basic Variety, looks for commonalities in acquisition patterns, but there is plenty of evidence for the influence of the native language in naturalistic as well as scholastic settings, and as Schwartz (1997) suggests, such influence can reduce the uniformity of acquisition patterns.

11 Conceptual Transfer and Linguistic Relativity

As described in the preceding section, Ijaz (1986) found differences between the prepositional choices of speakers of Urdu and German in identical discourse contexts, and this evidence supports her contention that "Concepts underlying words in the L1 are transferred to the L2 and mapped onto new linguistic labels, regardless of differences in the semantic boundaries of corresponding words" (p. 405). Other researchers have adopted a similar approach, looking at influences from the semantics and pragmatics of the native language as "conceptual transfer" (e.g., Jarvis, 1998; Pavlenko, 1999). Not surprisingly, then, discussions of transfer have addressed once again the issue of linguistic relativity.

The notion that language can affect thinking has a long intellectual history, and at least from the nineteenth century some have considered thought patterns in the native language to be a possible source of difficulty in learning a new language (Odlin, forthcoming). In the twentieth century, Lado (1957) discussed the arguments of Benjamin Lee Whorf, and Kaplan (1966/84) likewise invoked relativistic thinking in relation to contrastive rhetoric. Nevertheless, linguists of the later part of the century more often than not took a dim view of linguistic relativism (e.g., Pinker, 1994), and even in contrastive rhetoric some researchers have remained skeptical about the value of relativistic analyses (e.g., Connor, 1996). Despite such skepticism, recent empirical work indicates some clear effects of language-specific structures on cognition (e.g., Lucy, 1992; Pederson et al., 1998). It seems likely, then, that such work will stimulate further interest in the relation between relativism and cross-linguistic influence.

Pavlenko (1999) focuses on cognitive changes that may come with the transition from monolingualism to bilingualism, especially in cases where cross-linguistic correspondences are tenuous at best. Observing that the English word *privacy* has no close translation equivalent in Russian, she compares the ways that four groups discussed scenes in a film showing an example of an "invasion of privacy," to use an expression common in the native English-speaking group. A group of Russian immigrants in the United States likewise invoked the notion of privacy in their retellings of the events in the film, although they sometimes used constructions influenced by Russian phrasing, as in "she had some personal emotions, and she felt she was intruded upon, her personal space was intruded." Pavlenko notes that this construction constitutes a hybrid of English *personal space* and a Russian collocation *vmeshivatsia*

v chuzhiye chuvstva ("invading/interfering with someone's feelings"). Comparable influences of English on the Russian of the immigrants were also evident, and such hybridization was conspicuously absent in the retellings of monolingual Russian speakers and Russian learners of English living in St Petersburg. The difference between the immigrants and the English speakers living in Russia supports Pavlenko's view that bilingual memory representations are not static: using English as a second language in a native speaker environment can lead to the development of new concepts such as privacy which one's native language may not encode in any straightforward way. The results also suggest how much a social variable such as place of residence can correlate with or decrease the likelihood of cross-linguistic influence.

Since Pavlenko's Russian informants often spoke of emotions in relation to the incidents in the film, a question arises as to whether there exists any language-specific coding of affect, which in turn intersects with the question of whether the same repertory of emotions exists in all cultures. Many psychologists and anthropologists have debated the latter question (cf. Lazarus, 1991; Lutz and White, 1986), and both universalists and relativists can cite considerable evidence to support either position (Odlin, forthcoming). In Pavlenko's analysis, emotion has culture-specific and language-specific dimensions that can influence acquisition. Indeed, other evidence indicates that avoidance behaviors sometimes arise from taboos in the native language. Haas (1951), for example, cites the reluctance of speakers of Nootka to use the word *such* since the English form is phonetically similar to a Nootka word for the vagina, and similar instances of avoidance by Thai speakers are cited in the same article. As an alternative to avoidance, native language euphemisms and related speech acts may sometimes be translated in order to get around taboos (Odlin, 1998).

If there exist language-specific affective codings and if they can influence how learners acquire the target language, the problem of personal identity raised in the earlier quotation from Shen (1989) intersects in crucial ways with the problem of language transfer. The most obvious area where affect can matter is no doubt pragmatic transfer. Adults speaking their native language have a repertoire enabling them to choose how polite and how expressive to be, even if they do not always choose the best options for a given occasion. Learning to speak a second language normally requires learning a repertoire at least somewhat different in how affect is coded, and difficulties may arise either from "being at a loss for words" or from using a pragmatic routine acceptable in the native language but not in the target language. Olshtain (1983) contrasts the perceived need for apologies felt by native speakers of Russian, English, and Hebrew. For speakers of English, she found, there can be a problem of sounding too apologetic when speaking Hebrew, whereas for Hebrew speakers of English, the danger may come from not sounding apologetic enough. Adopting new pragmatic routines seems to entail the issue of identity raised by Shen with regard to written discourse. If so, the native language may not simply be a cognitive filter constraining hypotheses about the target language: it may also be an affective filter.

Although relativistic approaches will probably inform many future investigations of transfer, there will be a need to clarify just what conceptual transfer entails. It would be mistaken to equate a verbal concept in Ijaz's sense of the term with a cognitive concept. Otherwise, there are the pitfalls of a kind of relativism one might read into de Saussure's observation that words do not stand for pre-existing concepts. To illustrate this point, de Saussure provided a contrastive analysis of French *louer* and German *mieten*, where the former can designate either paying for or receiving payment for something, while the German verb cannot indicate the second meaning (de Saussure, 1915/59, p. 116). De Saussure's example naturally leads to a prediction that French learners of German will have difficulties with *mieten*, including the fact that they will have to learn a second German verb, *vermieten*, to speak accurately about cases of receiving payment. Likewise, German learners of French may have some difficulty in using *louer* to designate actions that in their native language are lexically distinct. The difference between French and German does not suggest any breathtaking conceptual gulf between the two languages, however. The notion of payment in either language inevitably implies both giving and receiving, and the different patterns of lexicalization in the two languages do not alter that fact. De Saussure apparently did not argue either for or against the existence of concepts independent of language, though he does suggest that such a concern belongs to psychology, not linguistics. Whether or not a linguist employs two different terms such as *concept* and *notion* (as was done in this paragraph), precision seems to require an assumption about different levels of cognition.

While Ijaz, Pavlenko, and others have demonstrated cross-linguistic influence involving concepts coded through language, it remains unclear how many conceptual levels are relevant and how "deep" transfer may run through those levels. Lucy (1992) stresses the difference between cases where non-verbal interpretations are affected by language-specific structures and cases where they are not. Whether particular structures in the native language might influence non-verbal memory or categorization in a learner's use of an interlanguage remains an empirical issue. It is worth considering, then, some structures and methods that future researchers might employ to address the issue. Lucy's own research focused on the mass-count distinction in Yucatec and in English, and to study differences in monolinguals' cognitive patterns, he employed verbal and non-verbal tasks involving pictures as well as sorting tasks, all of which helped to show differences in non-verbal categorization and memory. Similar contrasts in mass-count noun systems could certainly be explored in transfer research (and a natural starting point for such research would be, of course, to look at interlanguage Spanish noun phrases used by those Yucatec speakers who have only an intermediate proficiency in Spanish). Writing about the noun classifier system of Yucatec, Lucy notes the following intriguing parallel: "the classifiers resemble the category of aspect in the verb phrase which gives the logical or temporal perspective being applied to or presupposed of the predicate. Numeral classifiers give the logical or spatial perspective

being applied to or presupposed of the noun phrase complement" (p. 74). It is also worth noting that the study by Pederson et al. (1998) of spatial constructs used methods also employed in second language research (e.g., Bongaerts, Kellerman, and Bentlage, 1987).

Spatial and temporal constructs thus seem promising sites for future research exploring the connection between transfer and relativism. Indeed, the analyses of Kellerman (1995) and Slobin (1993) regarding constraints on transfer point in the same direction, even though their stance on relativism is somewhat more qualified than the research discussed in this section. In the case of aspect, there are frequent overlaps with other categories including tense and mood. The latter category also seems a promising one for future research. Klee and Ocampo (1995) found Quechua influence on Spanish involving evidentiality, a verb category important in Quechua as well as many other languages since it concerns speakers' evaluation of evidence (Givón, 1984), and thus there might be non-verbal cognitive effects related to linguistic coding.

If, as seems likely, future transfer research focuses sharply on the question of relativism, there will still be a need for universalist approaches. Indeed, Lucy and other researchers recognize typology as the natural link between universalist and relativist approaches. Categories such as aspect have universal as well as language-specific dimensions, and none should be neglected (cf. Chung and Timberlake, 1985; Comrie, 1976; Slobin, 1993). At the same time, much of what is interesting about cross-linguistic influence involves the variations in outlook that language learners show, and relativist investigations may say a great deal about such variations.

12 The Age Factor and Language Transfer

For people who do not read second language research it may often seem self-evident that children learn a second language more easily than adults do. In fact, many of those who believe whole-heartedly that "younger is better" can give interesting anecdotal evidence to support their belief. On the other hand, the growing specialist literature on the subject shows the complexity of the issues related to age and acquisition (e.g., Birdsong, 1999; Long, 1990; see also Hytlenstam and Abrahamsson, this volume). Not surprisingly, cross-linguistic influence figures prominently in the problems investigated (e.g., Singleton, 1989). If it is true that younger is better, perhaps adults show different patterns of transfer. Alternatively, if age differences matter less than is commonly supposed, perhaps the native language plays more or less the same role for both adult and child bilinguals. Whatever the correct account of transfer and the age factor turns out be (and that account still seems very far in the future), it clearly has major implications for other concerns in second language research, including the role of universals and the problem of fossilization.

One name often used as a cover term for age issues in second language research is the Critical Period Hypothesis. As Birdsong (1999) notes, there is

really more than one hypothesis which researchers have formulated, but a common question they address is whether or not there exists some cut-off point in a person's life beyond which it becomes impossible to achieve nativelike proficiency in another language. In his survey of varying approaches to the Critical Period Hypothesis, Birdsong lists several explanations including the following: a loss of neural plasticity in the learner's brain, a loss of access to Universal Grammar (or even a loss of UG itself), and a "maladaptive gain" in processing resources as a learner matures. The third of these accounts focuses on the overall relation between language and cognition. The problem-solving approaches that adults use in other aspects of life can also be used in second language acquisition – but perhaps at a cost. For example, the deductive reasoning used in many kinds of problem solving can also help in analyzing unfamiliar grammatical patterns in the new language. Even so, the strain on neural processing resources to perform such analyses may make it harder to adopt simpler but ultimately more successful learning strategies, ones presumably used by young children. In the section after this, a developmental argument made by Krashen (1983) with regard to cross-linguistic influence will be discussed.

The above explanations all have some supporting evidence, but each also fails in some respects, as do other accounts. In fact, considerable counter-evidence suggests that there may not actually be a critical period in the first place. If there really is no cut-off point, there might still exist significant age-related effects, but in that case some of the proposed explanations become less likely (e.g., total loss of access to Universal Grammar). Pronunciation might seem to be one area in which to find strong support for a critical period: after all, children often seem to have an easier time with the sound system of a new language. Beyond anecdotal evidence, some researchers have looked closely at the fossilized pronunciation of many adult bilinguals and inferred the existence of a critical period, though there has not been complete agreement about just how early on the period may end – whether early adolescence or somewhere around age 6, for example, is the cut-off point, or perhaps somewhat later (cf. Long, 1990; Scovel, 1988). However, there have been other studies suggesting that adults can achieve nativelike pronunciation, some of the most recent work coming from Bongaerts (1999) and his colleagues. The researchers taped several adult native speakers of Dutch whose English pronunciation proved to be indistinguishable from that of speakers of British English when the samples were played for listeners in England. Moreover, a comparable group of speakers of French as a second language proved to be impossible to distinguish from native speakers of French. One inherent problem in these and other studies is the uncertainty of whether the non-native speakers taped could, to use Long's phrase, "fool all of the raters all of the time" (1990, p. 267). Yet despite such inevitable sampling problems, it is clear that negative transfer and other inhibiting factors play a minimal role if any in the pronunciation of such highly proficient learners.

Bongaerts concedes that such individuals are few and far between, but no matter how few, they do challenge the notion of a critical period for acquiring

nativelike second language pronunciation. Further difficulty for such a notion is evident in work by Flege (1999) and others on pronunciation. Flege, Murray, and MacKay (1995) found that immigrants to Canada from Italy showed age differences in their pronunciation of English, but not ones that accord well with the notion of a critical period. For one thing, some individuals who had arrived in Canada well before age 6 had accents detectable to native speakers of English. More seriously still, there was a strong relation between the age of arrival and the degree of accentedness judged by each rater. While such a correlation does support the notion of age-related differences in pronunciation, it also suggests that neither age 6 nor any subsequent stage marks a drastic cut-off point. Although other factors can also contribute to a foreign accent, cross-linguistic influence often plays a major role, and the Canadian studies indirectly suggest that age of arrival interacts with transfer.

There have also been claims that a cut-off point exists for the acquisition of nativelike morphology and syntax (e.g., Patkowski, 1980), but once again some evidence calls into question the credibility of any version of the Critical Period Hypothesis. A study by Coppetiers (1987) has often been cited to argue for a critical period, as this investigation focused on individuals extremely proficient in French as a second language. Coppetiers found substantial differences between his sample of near-native speakers and a group of native speakers of French in their intuitions of certain syntactic structures. Nevertheless, a counter-study by Birdsong (1992) of a different sample of near-native speakers identified several individuals whose intuitions of French syntax were not substantially different from those of native speakers. As with the Bongaerts studies, one can always wonder whether the near-natives in Birdsong's investigation would invariably perform as they did in the study; it is possible, for example, that these individuals might produce non-native grammatical forms under certain conditions (e.g., great fatigue). Even so, the work of Bongaerts, Birdsong, and others suggests that the gap between native and near-native proficiency is at the very least much smaller than has often been supposed.

The results of such work on second language pronunciation and grammar accordingly call into question whether there is a cut-off in second language acquisition. Unless researchers can succeed in showing that there is a critical period that has subtle but real effects on the acquisition process, explanations of any age-related differences will have to take another form, quite possibly invoking multiple causes. Birdsong (1999) deems it conceivable "that the attested straight-line age function in L2A over the lifespan is the product of different causal mechanisms along the way, that is, the result of developmental factors up to the end of maturation, and of nondevelopmental factors thereafter" (p. 12). If the notion of a critical period is ultimately salvageable, the native language might prove to be the underlying difficulty in all cases. On the other hand, if Birdsong's speculation is correct, the role of transfer in age-related effects will probably be one contributing factor – but only one among several others.

Whatever the outcome of the critical period debate, the relation between cross-linguistic influence and age-related factors appears likely to be complex.

Even so, one supposition about transfer seems possible to rule out now: namely, that transfer is inevitable in child bilingualism. Children who start acquiring two languages in early childhood have sometimes shown little or no mixing of their languages, though some kinds of mixing (including what might be called transfer) do arise, as seen in studies described by Odlin (1989). In fact, the simultaneous acquisition of two languages may have more in common with first than with second language acquisition. Writing about a child learning Dutch and English simultaneously, de Houwer (1990) states, "it seems that Katie can, so to speak, be seen as two monolingual children in one" (p. 339). Very few other studies have identified bilingual children quite like Katie, yet however rare such cases are, they imply that cross-linguistic influence may be inevitable only when a second language begins to develop and only after the processes of primary language acquisition are well underway.

Up to this point, the comparison of first and second language acquisition has proceeded with the tacit assumption that the differences in social context have little bearing on the issues. However, some observations of one child language researcher show the risk inherent in discounting social factors. Slobin (1993) lists a number of advantages that child languages learners normally enjoy: "They are young . . . Their communication is not vital to their survival . . . Their communicative intentions do not seriously outstrip their communicative capacities . . . They are learning the social functions of language along with the language itself" (p. 240). Slobin's observations suggest some difficulties in comparing the successes of adults and children. For example, adults who learn English in order to practice medicine in, say, Britain or the United States will require a specialist vocabulary that neither adults nor children in the target language community usually know. Even in primary language settings, social variation affects acquisition in a variety of ways (e.g., Heath, 1983), but the kinds of target language competence that adults need will generally vary even more. In the case of medical terminology, positive transfer may prove especially important for speakers of languages sharing many of the Latin and Greek words used by English-speaking doctors. Accordingly, there are real problems in trying to compare the importance of positive transfer for some adults and for bilingual children. The comparability problem is not restricted to lexis, either. Highly literate adults will likely prove more adept at writing in genres shared in the discourse traditions of historically connected languages, as in the case of writing summaries (Hatzitheodorou, 1994). Once again, comparing adults and children in terms of the possible effects of positive transfer seems difficult if not impossible.

The social differences seen in the acquisition of literacy show the danger of simplistic conclusions about the relation between age and language transfer. Even assuming a highly parallel development of pronunciation and grammar is open to question. Flege, Yeni-Komshian, and Liu (1999) studied a large sample of Korean speakers who had come to the United States at varying ages, and as in other studies, those who had arrived at younger ages tended to have more nativelike pronunciation. The authors attribute the success of the younger

learners to a different pattern of interaction between Korean and English. Age-related differences were also evident in the grammaticality intuitions of the child and adult bilinguals, but Flege et al. find that educational differences and other social factors play a much greater role in such variation in comparison with what was seen in pronunciation. Accordingly, the interaction of age, social variation, and language transfer seems likely to differ from one linguistic subsystem to the next.

13 Transfer in Trilingual and Multilingual Settings

The study by Dušková cited earlier indicates that the much greater similarity of Czech to Russian than of Czech to English affects learners' judgments about what may be transferable. Some work has been done explicitly on the distances that learners perceive (e.g., Schweers, 1993), but the implications for transfer have been studied in the greatest detail in research in which the target language is a third, not a second, language.

Studies conducted on both sides of the border between Nigeria and Cameroon have been among the most interesting investigations of trilingualism, since there has been a great deal of contact involving the languages of two former colonial powers as well as several indigenous languages. In studies of the acquisition of French and English, Chumbow (1981) found their relative similarity leading to more frequent cross-linguistic influence than did Ngemba and Yoruba. Thus, for example, in his examination of sources of pronunciation errors in French as a third language, Chumbow found over twice as many English-inspired types as of types due to Ngemba influence. Although the cross-linguistic similarity (or lack thereof) is a powerful factor, Chumbow notes others including one mentioned earlier: the influence of African languages varied according to how proficient individuals were, city-dwellers using them less often than rural people. Chumbow's results are in general consonant with those of a study of learner intuitions in Cameroon by Ahukana, Lund, and Gentile (1981), as described by Odlin (1989). Other similar studies are discussed by Ringbom (1987).

Ringbom's own work on native speakers of Finnish and Swedish in Finland (whom he terms "Finns" and "Swedes" respectively) offers especially clear evidence of the importance of language distance. Looking at hundreds of writing samples in English from both groups, he found that the two languages were involved in many lexical errors but in different ways. The Finns produced many transfer errors based on both Finnish and Swedish, whereas the errors of the Swedes almost always reflected Swedish influence (and this despite years of study of Finnish by the Swedes in school). Moreover, the two groups also differed in the extent to which they employed forms cognate between Swedish and English. Swedes occasionally used low-frequency forms such as *marmor* ('marble') as in *A new house made of marmor* (Ringbom, 1987,

p. 146). However, the Finns proved far more willing to assume that any Swedish form was cognate with an English one, even in the case of frequent words such as *lösa* ('solve'), with the result often being false friends as in *This couldn't lose the problem* (p. 157). For the Finns, forms from their native language only rarely seemed to be possible cognates, as in *Our perils will see what we have had and will understand us better* (p. 162), where Finnish *perillinen* means 'descendant.' On the other hand, the Finns often drew on both Finnish and Swedish in what Ringbom calls "loan translations," as in *Weather moves quickly from the other kind to the other kind* (p. 125), which reflects the Finnish repetition of the same word (*toinen*, 'other'), which is semantically equivalent to *one . . . another* (*toinen . . . toinen*). Swedes likewise produced many loan translations, although these were nearly always based on their native language and only rarely on Finnish.

The fact that the Finns drew rather freely from both of their previously acquired languages indicates that their estimation of the language distances between English, Swedish, and Finnish is somewhat different from the cross-linguistic perceptions of the Swedes. Even though Swedish was used by both groups, the Finns showed a greater willingness to believe that there were many formal similarities between the two Germanic languages. At the same time, these learners also were influenced by Finnish even while the Swedes were not. Accordingly, the following generalization seems viable: a very different language can influence the acquisition of another, but mainly in cases where it is a learner's native language. If this generalization is correct, one implication naturally follows: it is not just cross-linguistic distance that matters in transfer, but also the specific acquisition history of every learner.

The importance of individual learner histories for transfer is also evident in a recent study of trilingualism in Belgium (Dewaele, 1998) in which the target language was French and the native language Dutch. For some of the learners, French was the third language they had studied (English being the second), whereas for a different group French was the second language (with English being the third). The transfer errors for the two groups differed primarily in frequency: the L2 French group produced errors influenced by English but their native language was the primary source of cross-linguistic influence, whereas the L3 French group showed fewer Dutch-based innovations and far more based on their second language (i.e., English). Another result in Dewaele's study also points to the importance of learner histories in that the L2 French group produced a higher proportion of intralingual errors, where French characteristics, not English or Dutch ones, influenced learners, as in:

Aors euh dans la Wallonie on a le concurrence entre Filmnet, Tévéclub, et Canal Plus pour euh *pouver* [puve] entrer dans le cable. (TL form: *pouvoir*)

"And then ugh in French-speaking Belgium you have competition between Filmnet, Tévéclub, and Canal Plus to ugh to be able to get into the cable (network)." (p. 478)

The L3 French group also produced intralingual errors (though not as many), yet in both groups interlingual (i.e., transfer) errors were more numerous. Even so, cases such as *pouver* are valuable reminders of the importance of the target language as a source for interlanguage constructions (cf. Laufer-Dvorkin, 1991).

One limiting factor in Dewaele's study is the close cross-linguistic distances involved. Dutch and English share much basic vocabulary, and French and English overlap a great deal in the overall extent of the lexicon. The Belgian research certainly indicates the importance of learner histories, but it remains unclear whether language distance would matter more if one of the two previously acquired languages in such a study were structurally more distant from the target language.

In cases involving more than two previously learned languages, the possible interactions between the languages may be even more complex, and the methodological complications of studying such cases are certainly greater, as seen in a study by Singleton (1987) of the spoken French of a learner named Philip. A native speaker of English, Philip had also learned some Latin and Irish in school, although it appears that his proficiency in these languages was marginal. On the other hand, he had acquired considerably more spoken (and written) Spanish, and Singleton deems this language to be the chief source of influence on Philip's French, although transfer from English figures in his speech, as well. There may also be influence from Latin and Irish, although these are more problematic; even so, Philip's self-reports indicate that he would sometimes "Frenchify" a Latin word. In the appendix to the study, examples of influence solely from English and solely from Spanish are listed, but also cases showing various combinations of possible influences: English/Irish, English/Spanish, Spanish/Latin, English/Irish/Spanish, English/Irish/Latin, English/Spanish/Latin, and English/Irish/Spanish/Latin. The idea that more than one source language can contribute to an interlanguage construction is certainly plausible, and in fact some researchers have also seen this as likely in trilingual settings (Ho and Platt, 1993; Leung, 1998). Nevertheless, as the combination of possibly contributing languages grows, so does the methodological difficulty of deciding whether an error is due to, for example, a combination of English/Irish/Spanish or of English/Irish/Latin.

Singleton deliberately excluded cases where Philip made no attempt to Frenchify words from other languages, but such intrusions also characterize interlanguage and perhaps play an especially large role in the behavior of multilingual learners. Especially illuminating are the introspective studies of three second language researchers, Richard Schmidt, Larry Selinker, and the late Sarah Williams, of their own transfer patterns (Schmidt and Frota, 1986; Selinker and Baumgartner-Cohen, 1995; Williams and Hammarberg, 1998). Although any kind of self-report data will present interpretive problems, the reflections of individuals with unusually high metalinguistic awareness can shed light on some of the complexities of cross-linguistic influence. Schmidt's detailed diary of his experiences does not focus on transfer, but it provides

striking examples of cross-linguistic influence from English and Arabic, the former his native language and the latter a second language he had spoken for many years. Not surprisingly, there were cases where he placed adjectives in front of nouns, the normal order in English, whereas Portuguese adjectives normally follow nouns. On the other hand, he notes with puzzlement some influences from Arabic, a language much less similar to Portuguese than is English: "This morning in class I said Arabic *yimkin* [Arabic "perhaps"] without realizing it wasn't Portuguese until L [his teacher] looked at me and smiled in noncomprehension" (p. 255). He also notes an article error that no doubt has its source in Arabic syntax.

The Selinker study is also based on a diary record of a native speaker of English, but in this case the target language is German, which the author had studied before, but with a lapse of three years before using it again during the time of the diary-keeping. Other languages studied that he mentions are Hebrew and French, with both being influences on his German, as in the following examples (p. 117), with underlines added to indicate the intrusions:

- *Sie haben quellen là-bas.* (Intended meaning: 'They have springs there.')
- *Tu as mein Fax bekommen?* (Intended meaning: 'Did you get my fax?')
- *eyze Denkmal...? For *welche* Denkmal...? (Intended meaning: 'which monument...?')*

The first two examples show French intrusions but differ in that the second may owe something to a phonetic similarity between French *tu* and German *du* (cognate forms of the familiar second person pronoun). In the third case, the intrusion comes from Hebrew and there is no phonetic similarity. Selinker and Baumgartner-Cohen list several possible factors that may be at work in such cases, including the semantic plausibility of the intrusion, the phonetic similarity of the intrusion to a target language form, a common functional class, transfer of training, and reinforcing influences from the native language. In discussing these and other possible factors, the authors speculate that the native language has a status rather different from other languages as a source of influence, and that much of the impetus for the intrusions comes from a "talk foreign" cognitive mode.

Support for something like the "talk foreign" mode is evident in the Williams and Hammarberg study, which in fact offers a more detailed explanation for the difference between influences from the native language and other languages known to the learner. Williams was, once again, a native speaker of English, and had some proficiency in a number of other languages including German, French, and Italian. The target language focused on in this study was Swedish, with English and German being the chief influences. Looking at over 800 instances of "language switches" in Williams's speech, the authors conclude that English has what they call an instrumental role, whereas German has a supplier role. The cases of English switches consisted mainly of instances of self-repair and similar functions, or metalinguistic comments on

what Williams had said in Swedish or to get assistance. On the other hand, it was “almost always German that supplied material for L3 lexical construction (other than Swedish itself)” (p. 318). The supplier role arises from varied factors, four of which Williams and Hammarberg consider especially important: the learner’s relative proficiency in each of the languages, the cross-linguistic distance of the languages (which they refer to as “typology”), the recency of each of the languages in the learner’s active repertory, and whether or not the learner has a native speaker’s competence in the language. The authors acknowledge that understanding the exact interplay of these four and other factors will require much more investigation.

The three diary studies described here raise difficult issues not only for transfer but also for second language research generally. In the Schmidt and Selinker studies, there are cases of intrusions from languages very dissimilar to both the target and native languages, which clearly complicates any contrastive predictions in trilingual settings. On the other hand, the nature of the influence of German and English in the Williams study suggests that the processing roles associated with each previously learned language can be quite distinct, and such differences suggest that performance as well as competence can greatly affect the language mixing seen in trilingual data. At present there seems to be no theory or methodology capable of showing the extent to which performance as opposed to competence is at work.

14 Transfer and Cognitive Models

As stated in the introduction, the problems related to cross-linguistic influence are so varied and so complex that there does not exist any really detailed theory of language transfer. On the other hand, a good deal of second language research addresses more general questions on language and cognition, including what role transfer plays. This section looks at the following questions: (i) how transfer works in speech production; (ii) whether transfer is involved in “knowing” vs. “knowing about” language; and (iii) how much the learning involved in transfer resembles patterns of learning beyond second language acquisition.

14.1 *Transfer and speech production*

As noted earlier, there has never been good reason to associate cross-linguistic influence with behaviorist theories of language, and for over twenty years some second language researchers have attempted to specify the overall working of transfer in a cognitivist framework (Sajavaara, 1981; Sharwood-Smith, 1979, 1986). Sharwood-Smith emphasized the creative construction that underlies much cross-linguistic influence, his models being among the first to conceive of such influence in terms of information processing. In his attempt to make more explicit the notion of “strategy,” his characterization of transfer

makes a point similar to one raised in the preceding section: namely, that the relation between performance and competence is a complex one. In contrast to Sharwood-Smith's focus on models of cross-linguistic influence, recent proposals by De Bot (1992) attempt to build on a highly elaborated model of the human speech capacity (Levitt, 1989) with special reference to bilinguals. Although De Bot's model does not address transfer exclusively, it recognizes the importance of cross-linguistic influence, and it, too, reflects some problems discussed in this chapter. A completely adequate model (which De Bot does not claim to have achieved) must take language distance into account. He argues that when the languages involved are highly similar, there is no need to posit separate knowledge stores, in contrast to what is necessary in the case of highly different languages. As De Bot notes, however, much remains unclear about the implications of having separately stored knowledge systems – a problem that seems especially difficult in the case of historically related languages that are nevertheless quite different (e.g., English and Russian). Also problematic is how such a model will treat differences in concepts, such as the three-way distance contrast seen in many languages, as in Spanish *aquí* ('here'), *ahí* ('there'), and *allá* ('yonder'), as opposed to the two-way contrast in Dutch *hier/daar* ('here'/'there'). Further work on conceptual transfer will certainly have to address such problems.

14.2 *Declarative and procedural knowledge*

The difficulties that older children and adults normally experience with a new language contrast strikingly with the apparently effortless facility that they often show in using even highly complex structures in their native language. While automaticity coupled with accuracy seems beyond the reach of adult language learners, the role of transfer in this regard remains unclear. Krashen (1983) distinguishes "acquisition" from "learning," with the former notion more or less equivalent to what other researchers have called "implicit" or "procedural" knowledge, and the latter notion more or less equivalent to "explicit" or "declarative" knowledge. For Krashen, cross-linguistic influence cannot play much of a role in "acquisition," which proceeds much as it does for monolingual children. The native language can and does play a role, he acknowledges, but primarily as one of the phenomena associated with "learning." Möhle and Raupach (1989), however, take a diametrically opposed stance, arguing that very little transfer involves declarative knowledge (i.e., "learning") at least in cases of instructed second language acquisition. Because procedural knowledge develops only gradually, they argue, the classroom environment can foster declarative knowledge that eventually becomes procedural (something Krashen has denied); furthermore, the native language can facilitate procedural knowledge when it is similar to the target language. Möhle and Raupach concede that some procedural knowledge will constitute negative transfer when the cross-linguistic correspondences are less than exact; even so, they clearly ascribe a more central role to transfer than Krashen does.

14.3 *Language transfer and lateral transfer*

As noted above, Sharwood-Smith (1979) outlined a cognitive model for cross-linguistic influence, and in doing so he drew on work on general learning theory (e.g., Ausubel, 1968). As an alternative to the stimulus-response approaches of behaviorism, cognitive models emphasize the importance of characteristics such as clarity and stability in the knowledge base that people draw upon to solve new learning problems, and Ausubel terms the operation of such previous knowledge "transfer." Thus it is natural to wonder about the relation between language transfer and transfer of learning in other contexts.

Singley and Anderson (1989) discuss learning in terms of two types of transfer: vertical and lateral. The former requires a hierarchical plan of action to use skills already learned in order to build new ones showing greater complexity. One example the authors provide is a proposed hierarchy involved in solving mathematical equations. In contrast to vertical transfer, lateral transfer involves reapplying skills at the same level of complexity, and one example they cite is second language acquisition where French and English would be either the native or target language. Unfortunately, they do not cite any actual second language research, and they primarily discuss a series of experiments where individuals learned to adjust to new editing programs. Comparing positive and negative transfer in the transitions from one text editor to the next, Singley and Anderson conclude that the former had a much greater effect in their experiments. Although the evidence draws on a very different domain, it is compatible with the claims of Ringbom (1992, 1987) that positive transfer has a greater potential to affect acquisition. It is tempting to identify vertical transfer with the kind of developmental pattern seen in first and second language acquisition, such as has been observed in the development of syntactic negation (Odlin, 1989). Likewise, the parallels between the positive transfer seen in text editing and that seen in learning foreign language vocabulary make it natural to wonder how much the notion of lateral transfer may be applicable in both cases. Even so, there are good reasons to be cautious, one of them being Singley and Anderson's assumption (p. 198) that the learning of grammatical rules in a foreign language constitutes one kind of declarative knowledge. As the discussion above indicates, however, the relation between transfer and procedural and declarative knowledge remains an open question in second language acquisition.

The three problems related to cognitive modeling discussed in this section are by no means the only ones relevant to transfer, and relevant research takes even more diverse forms, as seen in research on neural networks that has attempted to develop computer modeling of interlingual identifications (Gasser, 1990). It may be wondered just how applicable such modeling is to cases of acquisition involving actual people, especially with regard to questions such as affect and linguistic relativity, discussed earlier. Even so, such research may help develop more plausible models relevant to human cognition and transfer.

15 Conclusion

This chapter has considered a wide range of phenomena associated with cross-linguistic influence, although space does not permit much of a look at some related topics that are also important (e.g., effects of the native language on spelling the target language). From the complexity of the issues addressed, however, it should come as no surprise that there does not yet exist any comprehensive theory of language transfer – and the appearance of one any time soon seems unlikely. Even so, the last fifty years or so have seen considerable progress on several empirical issues that are prerequisites for any viable theory. Equally important has been the growing clarity about methodology: several researchers have formulated falsifiable claims about cross-linguistic influence and have subjected the claims to rigorous tests. Transfer is evident in all linguistic subsystems, and when a highly similar language is the target, the native language can greatly facilitate acquisition. These empirical findings are reasonably clear, but understanding whatever underlies the very real effects of transfer remains elusive, as Dewaele (1998) and others have observed.

The complexity of cross-linguistic influence partially explains the controversy that has sometimes surrounded the topic. When second language researchers started looking more closely at the differences between certain contrastive predictions and actual learner difficulties, the promise of contrastive analysis seemed to some to be illusory (Odlin, 1989). Even so, study after study has shown real effects of the native language, and researchers increasingly realize that good predictions require close study of what learners understand and produce. Looking at the effects of explicit instruction on question making in a second language, Spada and Lightbown (1999) argue that making learners aware of cross-linguistic differences will help with certain difficulties in the target language. Support for that claim is evident in a study of pronunciation already discussed (Bongaerts, 1999), and also in an investigation of the effects of contrastive instruction in certain areas of syntax (Kupferberg and Olshtain, 1996). It seems likely that further research will lead to similar results.

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