UC Riverside
Issues in Applied Linguistics

Title
L2 Influence on L1 in Late Bilingualism

Permalink
https://escholarship.org/uc/item/7gs944m5

Journal
Issues in Applied Linguistics, 11(2)

ISSN
1050-4273

Author
Pavlenko, Aneta

Publication Date
2000-12-30

DOI
10.5070/L4112005033

Peer reviewed

eScholarship.org Powered by the California Digital Library
University of California

L2 Influence on L1 in Late Bilingualism

Aneta Pavlenko
Temple University

The purpose of the present paper is to bring together several studies in an emerging area of inquiry—that of second language (L2) influence on the first language (L1) in adulthood—in order to reconceptualize the findings within a unitary theoretical framework. Previous research has convincingly established that L2 may influence and even overtake L1 in childhood L2 learning (cf. Wong-Fillmore, 1991). In the present paper, evidence is presented that similar processes may take place in adult L2 learning and use, with L2 influencing L1 phonology, morphosyntax, lexis, semantics, pragmatics, rhetoric, and conceptual representations. The processes taking place in these diverse areas are brought together within a single framework as borrowing, convergence, shift, restructuring, and loss. Possible constraints on L2 influence in adulthood are proposed and theoretical implications discussed, in particular with regard to the nature of L1 competence.

INTRODUCTION

Interference, or involuntary influence of one language on the other in bilingual competence and performance, continues to be one of the most commonly discussed and hotly debated issues in the study of bilingualism and second language acquisition (SLA). At the same time, both fields impose certain limitations on the investigation of interference in various areas of production and perception. The field of SLA typically limits its investigation to L1 transfer, conceptualized as "the use of native language (or other language) knowledge—in some as yet unclear way—in the acquisition of a second (or additional) language" (Gass & Selinker, 1992, p. 234). While the field of bilingualism does consider L2 influence on L1, this phenomenon is mostly investigated in childhood and simultaneous bilingualism or on the speech community level in language contact situations (Appel & Muysken, 1987; Clyne, 1967; Haugen, 1953; Romaine, 1995; Weinreich, 1953). In the present paper I will argue that combining the focus on individual L2 users with the interest in L2 influence on L1 could productively shape a new area of inquiry of potential interest to both fields, as well as to mainstream linguistics. I will also demonstrate that seemingly disparate instances of L2 influence in such diverse areas as phonology, morphosyntax, or semantics can be brought together within a unitary framework which views L2 influence phenomena as borrowing, convergence, shift, restructuring, or loss. Consequently, I will suggest that the studies of L2 influence on L1 in production and perception of individual adult L2 learners and users could be best understood within the multicompetence framework proposed by Cook (1991, 1992).

Issues in Applied Linguistics
ISSN 1050-4273
© 2000, Regents of the University of California
Vol. 11 No. 2, 175-205

In my discussion I will follow Kellerman and Sharwood Smith's (1986) suggestions and adopt the term *transfer* to refer to processes that lead to the incorporation of elements of one language into another (e.g., borrowing or restructuring), and the more inclusive term *crosslinguistic influence* to refer to transfer as well as any other kind of effect one language may have on the other (e.g., convergence or attrition). I will start out by presenting the theoretical premises that enable the study of L2 influence on L1 competence and performance in adulthood. Then, I will discuss the existing evidence of L2 influence on L1 phonology, morphosyntax, lexis, semantics, pragmatics, rhetoric, and conceptual representations. At the end, I will suggest possible constraints on L2 influence on L1 and present the implications of the L2 influence phenomenon for theories of SLA, bilingualism, and linguistic competence.

THEORETICAL FRAMEWORK FOR THE STUDY OF L2 INFLUENCE ON L1 IN ADULTHOOD

In his famous discussion of the three types of bilingualism, Weinreich (1953) presented sub-coordinate (often referred to as subordinate) bilingualism as one where in the process of foreign or second language learning in adulthood, the linguistic system of the weaker language is attached to and perceived through that of the dominant language. Based on this and other similar theoretical proposals, the investigation of transfer in the study of SLA is predicated on the assumption that once the speaker's language system has "matured," his or her linguistic native competence is no longer subject to change. A particularly strong version of this argument is presented in MacWhinney (1997), who suggests that once a local brain area

> has been committed, it then begins to accept input data that lead toward a fine-tuning of the activation weights governing processing. If a second language is then to be imposed upon this pre-existing neural structure, it would directly interfere with the established set of weights. In fact, the use of transfer in second language learning allows the learner to avoid such catastrophic interference of L2 back upon L1. (p. 136)

As a result of this assumption and the more general focus on the target language, transfer in SLA has mainly been studied as the influence of L1 on L2 competence and performance, and not as a bidirectional phenomenon. Bidirectionality is seen by SLA scholars as facilitation which can be applied equally to speakers of language A learning language B and to speakers of language B learning language A (Gass, 1987; Gass & Selinker, 1992).

While the SLA literature on L2 influence and, in particular, on L2 transfer remains scarce, there are a number of scholars who indicate that one's L1 competence may be subject to change in adulthood and that, therefore, the stable "nativeness" of one's first language is not as immutable as usually presumed (Major,

1992; Waas, 1996). This recent work is predicated on the convergence between the empirical study of first language attrition in bilingualism (Dorian, 1989; Fase, Jaspaert & Kroon, 1992; Major, 1992; Seliger, 1996; Seliger & Vago, 1991a; Waas, 1996) and the new theoretical paradigm in SLA which challenges the cornerstone of linguistic theory, the normative construct of "the native speaker" or rather the native/nonnative dichotomy (Braine, 1999; Cook, 1991, 1992, 1997, 1999a; Coulmas, 1981; Davies, 1991; Firth & Wagner, 1997; Grosjean, 1982, 1989, 1992, 1998; Kachru, 1994; Kecskes & Papp, 2000; Kramsch, 1997, 1998; Paikeday, 1985; Pavlenko, 1998, 1999; Rampton, 1990, 1995; Singh, 1998; Sridhar, 1994). Not surprisingly, the main target for criticism for these scholars is the Chomskian notion of monolingual native speaker competence, which "idealizes away variation, performance, and especially bilingualism, [and] is even less suitable to SLA than it is to linguistics" (Sridhar, 1994, p. 801). The first problem with the elusive notion of native speaker competence that they identify is its monolingual bias, constrained by Western cultural premises; this bias leads linguistic theory to deny or overlook the existence of multilingual contexts of interaction in which (a) a second language could influence first language competence and (b) bilinguals may behave differently from monolingual speakers of either language (Cook, 1991, 1992, 1997, 1999a; Grosjean, 1982, 1989, 1998; Major, 1992; Rampton, 1995; Singh, Lele & Martohardjono, 1988; Sridhar, 1994).

The monolingual bias, in turn, has resulted in the second problem identified by several scholars—the wasteful and damaging duplicative competence model in the study of SLA and bilingualism, which, according to Sridhar (1994), has led to the proliferation of terms characterizing "imperfect knowledge"—interlanguage, learner language, transitional competence—and to "a negative characterization of the overwhelming majority of L2 acquirers and users... as speakers of *interlanguages* (Selinker, 1992), that is, as failed monolinguals rather than successful bilinguals" (p. 802). Building on the previous criticisms of the duplicative competence model, Rampton (1995) states that "the idea that people really only have one native language, that really monolingualism is the fundamental linguistic condition, also underlies a widespread failure to recognise *new* and *mixed* linguistic identities" (p. 338). In a similar vein, Lantolf and Pavlenko (in press) suggest that the SLA research needs to consider L2 learners as agents who decide for themselves which linguistic and cultural targets to approximate and to what extent.

In order to account for linguistic functioning in a world where more than half of the population is bi- or multilingual, Cook (1991, 1992, 1997, 1999a) has proposed a theory of multicompetence suggesting that people who know more than one language have a distinct compound state of mind which is not equivalent to two monolingual states. A similar argument is advanced by Grosjean (1982, 1989, 1992, 1998), who states that a bilingual is not the sum of two complete or incomplete monolinguals in one body but rather a specific speaker-hearer with a unique, but nevertheless complete, linguistic system. The competencies of this speaker-hearer are developed to the extent required by his or her needs and those

of the environment. In agreement with this view, in the present paper I will adopt and use interchangeably the terms *late or adult bilinguals* and *L2 users* (cf. Cook, 1999a), predicated on the understanding that the individuals in question have learned their second language postpuberty and that they may still be in the process of acquiring some aspects of their L2, while at the same time using their two languages on a more or less regular basis. In what follows, I will discuss the influence of the subsequently learned languages on the mother tongue of L2 users and demonstrate that adults' L1 systems are neither stable nor impermeable. I will argue that the multicompetence view, which sees multilinguals' linguistic repertoires as a "unified, complex, coherent, interconnected, interdependent ecosystem, not unlike a tropical forest" (Sridhar, 1994, p. 803), offers a much more flexible framework within which L2 influence on L1 can be discussed and understood not as a "catastrophic interference" but as a complex process, worthy of further investigation.

L2 INFLUENCE AND TRANSFER

What do we know about possible influences of one's L2 on L1? To date, L2 influence has been documented in studies of L2 users' L1 phonology (Andrews, 1999; Fischer-Jorgensen, 1968; Flege, 1987a; Flege & Eefting, 1987; Major, 1992, 1993; Williams, 1979, 1980), morphosyntax (Altenberg, 1991; Boyd & Andersson, 1991; Cook, 1999b; De Bot, Gommans, & Rossing, 1991; Pavlenko & Jarvis, 2000; Seliger & Vago, 1991b; Skaden, 1999; Stoessel, 2000; Waas, 1996), lexicon and semantics (Boyd, 1993; Grabois, 2000; Jaspaert & Kroon, 1992; Latomaa, 1998; Olshtain & Barzilay, 1991; Pavlenko & Jarvis, 2000; Stoessel, 2000; Van Hell, 1998a, 1998b;Van Hell & Dijkstra, 2000; Yoshida, 1990), L1-based conceptual representations (Caskey-Sirmons & Hickerson, 1977; Otheguy & Garcia, 1988, 1993; Pavlenko, 1997, 1999; Pavlenko & Jarvis, 2000; Shimron & Chernitsky, 1995), pragmatics (Latomaa, 1998; Tao & Thompson, 1991; Valdés & Pino, 1981; Waas, 1996), and rhetoric (Kecskes & Papp, 2000; Pavlenko, 1998). Not only do these effects seem to be pervasive and widespread, but they may also appear quite early in the L2 learning process. For example, in a study of oral narratives of Russian L2 users of English, Pavlenko and Jarvis (2000) examined narratives produced by 22 participants, all of whom had learned their English postpuberty and had been exposed to English for a period between 3 and 8 years. The researchers found that 17 out of 22 participants exhibited L2 influence in their use of Russian and that among them were five participants who had been in the United States for only three years.

Due to the fact that different researchers focus on different areas of linguistic competence and performance, the instances of L2 influence identified in the studies to date have either been categorized in diverse ways (e.g., similar instances have been categorized by different researchers as either convergence or shift) or not categorized at all. To remedy this disparity and to impose more conformity on

the discussion, I have attempted to apply a unitary classificatory framework that has emerged from my own work on classification of instances of conceptual transfer (Pavlenko, 1999). As will be shown below, I have found this framework quite useful for categorizing instances of transfer in other fields. At the same time, this attempt at categorization does not aim at being final or exhaustive, and I would be delighted to see future studies refining and expanding this framework. Meanwhile, I will theorize L2 influence on L1 as resulting in one or more of the following five phenomena: (a) *borrowing transfer*, or addition of L2 elements to L1 (e.g., lexical borrowing whereby new items are added to the lexicon); (b) *convergence*, or creation of a unitary system, distinct from both L1 and L2 (e.g., production of consonants that are situated at the midpoint between L1 and L2 values). In some previous work this phenomenon is at times referred to as *shift*; I find this term unsatisfactory as a shift may be a movement away from one system toward another, as seen below; (c) *shift*, or a move away from L1 structures or values to approximate L2 structures or values (e.g., semantic extension whereby lexical items in L1 are vested with the meanings of their L2 translation equivalents); (d) *restructuring transfer*, or incorporation of L2 elements into L1 resulting in some changes or substitutions, or a partial shift (e.g., syntactic restructuring whereby L2 rules are incorporated into L1 grammar); (e) *L1 attrition*, that is, loss of (or inability to produce) some L1 elements due to L2 influence (e.g., acceptance of syntactically deviant L1 sentences under the influence of L2 constraints).

In each respective section I will show how the findings fit into this framework and summarize explanations provided by different researchers in order to account for their findings. Subsequently, I will synthesize these summaries as an initial list of possible constraints on L2 influence on L1. Throughout the discussion, in accordance with the emic, or participant-relevant, perspective, I will pay particular attention to insights provided by actual L2 users.

L2 Influence in Phonology

To date, L2 influence on L1 is probably best researched and acknowledged in the areas of bilingual lexicon and phonology. Current research in phonology suggests that the human perceptual system remains somewhat flexible throughout the life course and carries out modifications in response to changes in sensory input. Consequently, in addition to reliance on L1 transfer, L2 learning may involve a certain degree of "restructuring of the acoustic-phonetic space encompassing both L1 and L2" (Leather & James, 1996, p. 279). This restructuring may result—both in perception and production—in L1 parameter values that deviate from monolingual norms in the direction of the norms established for L2 (Flege, 1987b; Laeufer, 1997; Leather & James, 1996). Consequently, some L2 users may no longer be perceived as native speakers of their L1. For instance, one of the American informants in Latomaa's (1998) study of English L2 users of Finnish complained: "After five years here in Finland I went back to the States and the neighbors asked which country I am from" (p. 65).

Several studies indicate that even when L2 learning takes place postpuberty, the second language phonology may affect that of the first language (Fischer-Jorgensen, 1968; Flege, 1987a; Flege & Eefting, 1987; Major, 1992, 1993; Williams, 1979, 1980). The research paradigm employed in these studies is perception and production of stop voice onset time (VOT), which is a sufficient acoustic cue for distinguishing between initial stop consonants in many languages. Even though VOT is just one feature characterizing one's production and perception, several studies have confirmed that VOT values are closely correlated with overall judgements on the "nativeness" or "accentedness" of one's speech (Flege & Eefting, 1987; Major, 1992). Table 1 summarizes the results of the studies of L2 influence on L1 phonology in adulthood in alphabetical order and with regard to the key variables: languages involved, subjects' ages at the time of study, age of acquisition, length of exposure, context of acquisition, and L2 effects. While some of the studies involved other populations of participants, the information provided here refers exclusively to L2 users.

Table 1: L2 Influence on L1 Phonology in Late Bilingualism

Studies	Languages (L1/L2)	Ages	Age of Acquisition	Length of Exposure (in Years)	Context of acquisition	Outcome
Andrews, 1999	Russian/English	20-29	6-12	14-17	natural and formal	shift
Fischer-Jorgensen, 1968	French/Danish	32	19	13	natural	shift
Flege, 1987a	French/English English/French	mean 38 mean 35	postpuberty	average 12.2 average 11.7	natural and formal	convergence and shift
Flege & Eefting, 1987	Dutch/English	adults	12	6+	formal	convergence
Major, 1992, 1993	English/ Portuguese	35-70	22-36	12-35	natural	convergence and shift
Williams, 1979, 1980	Spanish/English	14-16	11-16	0-3.5	natural	convergence and shift

In the most detailed study to date, Major (1992, 1993) looked at the VOT continuum of five American immigrants in Brazil, comparing them to monolingual speakers of Brazilian Portuguese and American English. The elicitation procedures included not only reading word and sentence lists but also tape-recorded conversations, thus allowing the researcher to examine formal speech (list read-

ing) and casual speech (conversation). It was found that the VOTs in the subjects' English deviated from the monolingual speaker values toward the direction of Brazilian Portuguese (shift); for some this deviation was highly significant ($p < 0.001$). Two subjects, B1 and B2, retained English better, but were worse in their ability to speak Portuguese. Two others, B3 and B4, lost native-like proficiency in English and failed to master the target language: their VOTs were at an intermediate stage between English and Portuguese values (convergence). Finally, B5 demonstrated native-like performance in formal English and Portuguese but severe loss in casual English (loss). The overall data suggested that stylistically L1 loss proceeds from casual to formal: For all participants it was greater in casual than formal style, which, in turn, may be due to greater monitoring in the formal register (Major, 1992).

A case study by Fischer-Jorgensen (1968) revealed that a French woman, who had lived in Denmark since the age of 19 for about 13 years, exhibited a shift effect whereby her French VOTs for /p/, /t/, and /k/ became longer than those typical for French short-lag stops. Convergence effects were found in a series of experiments with Dutch L2 users of English by Flege and Eefting (1987). The most advanced group of L2 users produced significantly shorter VOTs in their native Dutch than the monolingual native speakers, suggesting an appearance of a merged system. Similarly, Flege (1987a) demonstrated that late French-English bilinguals, long-term expatriates from France, used the same phonetic realization rules for French and English /t/, which resulted in a moderately aspirated stop, different from both L1 and L2 values. In contrast, late English-French bilinguals also shifted their L1 values but produced /t/ with different VOT values in English and French. Interestingly, however, learning French did not influence ways in which the English speakers produced /u/ in English. Flege (1987a) explains his findings by appealing to the mechanism of equivalence classification, which leads the subjects to identify acoustically different phones in L1 and L2 as belonging to the same category. Williams (1979, 1980) points out that simultaneously with production effects, L2 learning may influence perception. The researcher demonstrated that Spanish teenagers who were shifting from a Spanish-like to an English-like manner in producing both English and Spanish word-initial voiced and voiceless tokens were also undergoing changes in perception. As a function of exposure to English, these teenagers exhibited a gradual shift from a Spanish-like pattern to an English-like pattern of labeling the VOT series: All discrimination peaks were found close to the area of the English contrast.

In an exploratory study of L2 influence on L1 intonation, Andrews (1999) conducted interviews with ten Russian-English bilinguals, all of whom were born in the Soviet Union and left for the United States either in late childhood or in early adolescence. The interviews, based on a picture series, involved a structured set of responses and thus facilitated comparisons between Russian-English bilinguals and American monolinguals. The author identified several areas where the L2, English, influenced L1 intonation of the study participants, among them

adoption of English-like high falls and rise-falls, a predominance of declarative utterances with falling tones where in Russian one would expect a rising tone. adoption of the English rising tone in yes/no questions where in Russian one would expect a falling tone, and diphthongization of vowels.

In sum, research on L1 phonology of late bilinguals has documented both convergence and shift effects in production and perception of L1 VOTs. Researchers have explained the effects observed through universal psycholinguistic mechanisms, such as the equivalence classification (Flege, 1987a), or linguistic and psychoacoustic differences across particular language groups (Williams, 1980). Some scholars have also identified extralinguistic factors that allow us to understand better which individuals may be subject to L2 influence. Six extralinguistic factors appear important in the study of L2 influence on L1 phonology: (a) age at which L2 acquisition began, whereby VOT values of younger learners exhibit more shift effects than those of older learners (Williams, 1980); (b) degree of L2 fluency, in particular in casual speech (Major, 1992, 1993) and, possibly, dominance at the time of testing (Laeufer, 1997); (c) the amount of past and present intensive exposure to the speech of native L2 speakers (Andrews, 1999; Flege, 1987a; Major, 1992, 1993; Williams, 1980); (d) language prestige, whereby values may shift toward the more prestigious L2 (Williams, 1980); (e) cultural identification, whereby one's values shift toward the language one identifies with (Major, 1993); and (f) phonetic mimicry ability (Major, 1993).

Clearly, it is difficult to base one's conclusions about L2 influence on L1 phonology predominantly on the studies of stop consonant production and perception. Future studies should extend the investigation from the low phonetic level of VOTs to other areas of phonology. The few exploratory studies to date suggest that a number of other areas may be subject to L2 influence, among them intonation (Andrews, 1999; Latomaa, 1998), the allophonic realization of phonemes, and the diphthongization of vowels (Andrews, 1999; Seliger & Vago, 1991b). Investigation of these factors may lead to a better understanding of cases in which native speakers of a particular language are perceived as nonnative (Latomaa, 1998; Major, 1993).

L2 Influence in Morphosyntax

While the number of studies that look at morphosyntactic competence of individual postpuberty bilinguals in L1 is still limited, a few investigations suggest that this competence is also subject to L2 influence and change. The first area where the change is noticeable is L1 sentence structure, where word-order rules may be subject to loss or restructuring under the influence of L2. Deviation from standard German sentence structure was found in a study by Waas (1996) conducted with 118 German speakers who had arrived in Australia as adults and resided there for an average of 16 years. Seliger and Vago (1991b) found extensions of L2 English rules for agreement, tag questions, word order, and preposition preposing in the L1 production of their Hungarian- and German-speaking infor-

mants. Boyd and Andersson (1991) noticed that under the influence of Swedish, the placement of adverbials became more variable in the L1 speech of their American informants, while in the L1 speech of the Finnish informants, Swedish influenced the loss of possessive clitics. Skaden (1999) demonstrated that the frequency of postpositioning of possessives in the L1 Serbo-Croatian of seven Serbian and Croatian migrants in Norway increased under the influence of Norwegian. While in Serbo-Croatian postpositioning occurs in very limited contexts, the speakers incorrectly extended the range of these contexts under the influence of their L2. Finally, Stoessel (2000) showed that immigrant women who had arrived in the United States between the ages of 18 and 32 and spent between 6 and 12 years in the country experienced problems with L1 sentence structure and writing skills.

My own studies of L2 influence on L1 in the Russian narratives of late Russian-English bilinguals (Pavlenko, 1997; Pavlenko & Jarvis, 2000) uncovered several instances of morphosyntactic and, in particular, subcategorization transfer, exhibited as restructuring. In one such instance, a participant said "*kakoi-to orkestr igral muzyku*" ("some orchestra played music"). In English, such an utterance would be appropriate, as the verb *to play* can subcategorize for one object only. In contrast, in Russian it is acceptable not to specify the kind of music in VS constructions, such as *igrala muzyka* (literally, "[was] playing music") or *igral orkestr* (literally, "[was] playing orchestra"). However, in SVO constructions the verb *igrat'* 'to play' in reference to music has to subcategorize for two objects or a modified object and thus can only be used when discussing a particular type of music or music by a particular composer, for example, "*kakoi-to orkestr igral muzyku Shostakovicha*" ("some orchestra played music [by] Shostakovich"). L2 influence on L1 was particularly visible when the participants discussed emotion states. While in Russian emotions are typically depicted as actions, with the help of verbs, in English they are most frequently depicted as states, with the help of adjectives (Wierzbicka, 1992). Thus, under the influence of their L2, Russian L2 users of English used perception copulas and change-of-state verbs, such as *stanovit'sia* 'to become,' followed by emotion adjectives in contexts where Russian monolinguals performing the same task employed action verbs, such as *rasserdit'sia* 'to get angry' or *rasstroit'sia* 'to get upset.' Realizing that their choices may not be appropriate, the L2 users oftentimes paused, stumbled, stuttered, or resorted to running a metalinguistic commentary, such as: "*ona stanovitsia ochen' kakaia-to takaia... trudno, ia dazhe ne znaiu kak eto skazat'... nu, kak-to melankholicheskoe u nee sostoianie...*" ("she becomes so very... it's hard, I don't even know how to say this...well, she is in a melancholic state.").

Other researchers approached the issue of competence through grammaticality judgments, suspecting that L2 effects on L1 may be exhibited not only as an inability to produce appropriate sentence structure, paradigmatic L1 conjugations, or declensions, but also as an inability to make appropriate grammaticality judgments and as acceptance of syntactically deviant sentences (Seliger & Vago, 1991b). In a case study involving two German users of English, Altenberg (1991) demon-

strated that after 40 years of residing in the United States, some of the subjects' grammaticality judgments of German sentences were affected by English morphosyntax, in particular with regard to verb usage, especially for phonetically similar verbs such as *brechen* 'to break.' Cook (1999b) used grammaticality judgments to investigate sentence processing strategies of adult L2 users. He found that sentence processing strategies of Japanese learners of English no longer favored animacy or case (like those of monolingual speakers of Japanese), but were heavily influenced by word order (like those of monolingual speakers of English). For lack of further evidence that will allow us to decide whether this effect is a convergence or a shift effect, it will be seen more modestly as convergence. The results of the investigations of L1 morphosyntax of L2 users are summarized in Table 2.

Table 2: L2 Influence on L1 Morphosyntax in Late Bilingualism

Studies	Languages (L1/L2)	Ages	Age of Acquisition	Length of Exposure (in Years)	Context of acquisition	Outcome
Altenberg, 1991	German/English	65 69	25 29	40+	natural	restructuring and loss
Boyd & Andersson, 1991	English/Swedish Finnish/Swedish	adults	-	-	natural	restructuring and loss
Cook, 1991b	Japanese/English	adults	-	-	formal	convergence
De Bot, Gommans, & Rossing, 1991	Dutch/French	adults	17+	11-36+	natural	loss for some
Pavlenko & Jarvis, 2000	Russian/English	18-26	13-19	3-7	natural and formal	restructuring
Seliger & Vago, 1991b	Hungarian/ English German/English	adults	-	-	natural	restructuring
Skaden, 1999	Serbo-Croatian/ Norwegian	36.5-56	16.5-36	20	natural	restructuring
Stoessel, 2000	various L1s/ English	27-40	18-32	6-12	natural	restructuring and loss
Waas, 1996	German/English	adults	15+	10-20	natural	restructuring and loss

As seen in Table 2, the few available studies of L2 influence on L1 morphosyntax indicate that the main effects of L2 on L1 in this area may be loss (Altenberg, 1991; Boyd & Andersson, 1991; Stoessel, 2000; Waas, 1996), conver-

gence (Cook, 1999b), and restructuring (Altenberg, 1991; Boyd & Andersson, 1991; Pavlenko & Jarvis, 2000; Seliger & Vago, 1991b; Skaden, 1999; Stoessel, 2000; Waas, 1996). Restructuring, in turn, may be driven by such psycholinguistic mechanisms as coding efficiency (Sharwood Smith, 1989) or redundancy reduction (Seliger, 1989). In other words, it appears that the L1 grammar is simplified or restructured when the L2 has a simpler, more widely distributed rule.

Several researchers have suggested that psycholinguistic and linguistic factors, such as typological similarity, are involved in a complex interplay with extralinguistic factors when it comes to L2 influence on L1 morphosyntax. De Bot, Gommans, and Rossing (1991) studied L1 attrition in the speech and grammaticality judgments of Dutch immigrants in France who immigrated after the age of 17 and had lived in France for at least 10 years. The authors found significant effects for both the amount of contact with L1 speakers and for the time elapsed since emigration: Judgments of those with the least contact with L1 speakers deviated the most from those of the control group. Similar conclusions are reached by Stoessel (2000), who demonstrated that L1 attrition was most pronounced among immigrant women who were more integrated into L2 social networks and who relied more on their L2 contacts for emotional support. Other extralinguistic factors identified in the studies above as contributing to L2 influence are language prestige, social status, and willingness to integrate into the L2 environment and resulting assimilation (Boyd & Andersson, 1991; Pavlenko & Jarvis, 2000; Seliger & Vago, 1991b; Waas, 1996).

L2 Influence in the Lexicon and Semantics

Unlike L2 influence on L1 morphosyntax, lexical and semantic influence has been extremely well-documented in the literature on bilingualism (Appel & Muysken, 1987; Grosjean, 1982; Haugen, 1953; Romaine, 1995). Following Haugen (1953), many researchers distinguish between the following forms of lexical borrowing: (a) *loanwords* (or lexical borrowings per se): lexical items from one language adapted phonologically and morphologically for use in another (e.g., *boyfriend* and *appointment* in the speech of Russian immigrants in America); (b) *loan blends*: hybrid forms which combine elements of both languages (e.g., *Gumbaum* 'gumtree' in Australian German); (c) *loan shifts* (often referred to as *semantic extension*): L1 words which acquire the L2 meaning (e.g., *grosseria* 'rude remark' in the English of Portuguese immigrants used to refer to a grocery store); (d) *loan translations* (or *calques*): literal translations of L2 words, phrases, or expressions (e.g., Russian *neboskreb* ('skies'+ 'scrape') for 'skyscraper'). While all of these phenomena can be encountered as part of a regular language change, they are particularly typical of "immigrant bilingualism" in which new L1 forms and expressions appear to reflect new social and conceptual reality. Thus, the goal of my discussion of the lexicon is twofold. In the present section I will focus on the changes in the lexicon, semantic networks, and in lexical processing, whereas in the next section I will treat some, but not all, of these phenomena as reflecting

changes in the underlying conceptual representations. Once again, my discussion will be limited to studies that document lexical and semantic influence in the L1 speech of individual late bilinguals; I will not discuss research conducted with several generations of bilinguals. Results of the lexicon studies with L2 users are summarized in Table 3.

Table 3: L2 Influence on L1 Lexicon and Semantics in Late Bilingualism

Studies	Languages (L1/L2)	Ages	Age of Acquisition	Length of Exposure (in Years)	Context of acquisition	Outcome
Boyd, 1993	English/Swedish Finnish/English	adults	postpuberty	10+	natural	borrowing
Grabois, 2000	English/Spanish English/French Spanish/French French/Spanish	adults	postpuberty	5-20+	natural	shift
Jaspaert & Kroon, 1992	Dutch/English	83	23	60	natural	borrowing, shift, and convergence
Latomaa, 1998	English/Finnish	average 42.4	postpuberty	average 11.4	natural	borrowing, shift, and loss
Pavlenko & Jarvis, 2000	Russian/English	19-26	13-19	3-7	natural	borrowing and shift
Olshtain & Barzilay, 1991	English/Hebrew	23-55	postpuberty	8-25	natural	loss
Stoessel, 2000	various L1s/ English	27-40	18-32	6-12	natural and formal	loss
Van Hell, 1998a, 1998b; Van Hell & Dijkstra, 2000	Dutch/English	college students	10-12	6-8	natural and formal	convergene
Yoshida, 1990	Japanese/English	college students	-	2+	natural	convergence

Many scholars suggest that the lexicon is the first and the main area where L2 influence becomes visible (Boyd, 1993; Latomaa, 1998; Otheguy & Garcia, 1993; Pavlenko & Jarvis, 2000). In a study of Russian narratives produced by 22 Russian-English bilinguals, Pavlenko & Jarvis (2000) found that semantic transfer was involved in 71% of the instances of L2 influence on L1 identified in the data. These instances included semantic extension, lexical borrowing, and loan translation. Semantic extension errors involved attribution of a particular meaning of a

polysemous English word to the Russian word that shares some but not all meanings of its "translation equivalent." For instance, the Russian word *stsena* 'stage' or 'scene' could also mean an embarrassing display of anger or bad manners, like its English counterpart; it does not, however, refer to areas or spheres of activity (e.g., the fashion scene) or places where some events or actions occurred (e.g., the scene of the accident). Thus, one participant's reference to a woman's desire "*pomeniat' kak by... stsenu...*" ("[to] change somehow... [the] scene," i.e., to leave) constitutes a semantic extension. The instances of lexical borrowing in the study involved the English words *landlord*, *appointment*, and *boyfriend* adapted phonologically and morphologically. The instances of loan translation involved inappropriately rendered metaphoric expressions and collocations, such as "*predlagaet ei kakuiu-to emotsional'nuiu pomoshch*" ("offers her some emotional help") where an appropriate Russian expression would have been *podderzhka* '(moral, emotional) support.' In the light of the framework proposed in this paper lexical borrowing and loan translation are seen as borrowing, while semantic extension is seen as shift.

Jaspaert and Kroon (1992) analyzed the written language production of A.L., an 83-year-old man who had lived in the United States for over 60 years. A native speaker of Dutch, over the years A.L. switched to English both in his oral communication and in writing, continuing to write in Dutch to his relatives and friends in the Netherlands. The analysis of these letters demonstrated that about 5% of open category words (i.e., nouns, adjectives, and verbs) were subject to L2 influence. The marked items consisted of two main categories: (a) loanwords and loanblends (seen here, respectively, as borrowing and convergence), for example, *bekomen* instead of *worden* 'to become' (consisting of English *become* with the Dutch ending *-en*) and (b) loanshifts and loan translations (seen here, respectively, as shift and borrowing), for example, *oproepen*, a literal translation of the English *to call up*, was used instead of the Dutch *opbellen* 'to telephone.' The authors explained the marked items as an adaptation of the semantic structure of the informant's lexicon to the semantic structure of the language of the people he interacted with on a daily basis. Borrowing effects were documented in the speech of Americans living in Finland by Latomaa (1998) and in the study of Finnish-Swedish and English-Swedish bilinguals by Boyd (1993), with the former providing additional evidence of shift and loss. Boyd's (1993) study emphasizes possible crosslinguistic differences in incorporation strategies, demonstrating that late Finnish-Swedish bilinguals integrate lexical borrowings both phonologically and morphologically, while American L2 users of Swedish treat incorporations as single-word code switches.

Semantic networks of late bilinguals are explored in the studies by Yoshida (1990) and Grabois (2000). Yoshida (1990) compared word associations of 35 Japanese college students who at one time or another had lived in the United States and attended American schools to those of Japanese and English monolinguals. Four categories of words were selected for the test: nature (e.g., *haru* 'spring'),

daily life (e.g., *sensei* 'teacher'), society and ideas (e.g., *seifu* 'government'), and culture (e.g., *shougatsu* 'New Year's Day'). The bilingual subjects were asked to provide word associations in Japanese to the Japanese stimuli and in English to the English stimuli. On some items in the four categories the bilinguals patterned with the monolingual Japanese informants; on others, however—in particular in the culture category— the participants' responses turned out to be different from both the Japanese and the English monolingual control groups, which suggests that convergence of semantic networks may be taking place for these bicultural bilinguals. Another word association study with L2 users provided evidence of a shift from L1 to L2 (Grabois, 2000). The researcher compared word associations of monolingual speakers of English and Spanish to those of late English-Spanish bilinguals who had lived in Spain for approximately 10 years. He found that lexical networks of a series of abstract concepts, including *power*, *love*, and *happiness*, were different and relatively consistent for the two monolingual groups and that the late English-Spanish bilinguals in many aspects differed from the speakers of American English and resembled the speakers of Spanish, their L2.

L2 influence on L1 lexical processing was found in a series of studies by Van Hell (1998a, 1998b) and Van Hell and Dijkstra (2000) which looked at native language performance of advanced Dutch learners of English. The first series of experiments demonstrated that the subjects were more sensitive to cognate status than monolinguals: They were faster and more often successful in finding an associate to cognates than to noncognates (Van Hell, 1998a). The subsequent studies with advanced learners of English who also had a weak knowledge of French demonstrated that lexical decision times and association times to Dutch words that were cognates with English (e.g., *zilver* 'silver') were shorter than those to the Dutch noncognates (Van Hell, 1998b; Van Hell & Dijkstra, 2000). However, performance on the Dutch words that were cognates with French (e.g., *muur* 'wall', French *mur*) was equal to that on the Dutch noncognates, which indicates that the second language may influence native language performance only at the advanced levels of proficiency (Van Hell, 1998a, 1998b; Van Hell & Dijkstra, 2000).

Finally, L1 lexical retrieval difficulties were documented by Olshtain and Barzilay (1991), who administered an elicitation task to their subjects, American L2 users of Hebrew living in Israel. The researchers found numerous lexical retrieval problems, suggesting that at times English words may have been blocked by their Hebrew counterparts (e.g., *cincenet* 'jar'). Similar problems were noted by Latomaa (1998) in a study of the speech of Americans living in Finland: Their speech was not only full of lexical borrowings and loan translations, but at times they also complained about word-finding difficulties when speaking English, their L1. In Stoessel's (2000) study of L1 attrition in the speech of immigrant women in the United States, it was found that while word-finding difficulties were experienced in general, they were particularly severe in the areas of L1 slang and in the choice of idiomatic expressions.

In sum, four types of L2 effects are documented to date in the L1 lexicon of L2 users: borrowing (Boyd, 1993; Jaspaert & Kroon, 1992; Latomaa, 1998; Pavlenko & Jarvis, 2000), shift (Grabois, 2000; Jaspaert & Kroon, 1992; Latomaa, 1998; Pavlenko & Jarvis, 2000), convergence (Jaspaert & Kroon, 1992; Van Hell, 1998a, 1998b; Van Hell & Dijkstra, 2000; Yoshida, 1990), and loss (Latomaa, 1998; Olshtain & Barzilay, 1991; Stoessel, 2000). Several psycholinguistic and sociolinguistic factors affecting L2 influence on L1 lexicon and semantics have been posited in the literature (for a detailed discussion, see Romaine, 1995). The most important one appears to be the need for readily adoptable words and expressions to refer to new objects and concepts specific to the L2 environment and culture (Jaspaert & Kroon, 1992; Otheguy & Garcia, 1993). Weinreich (1953) suggested that the primary motivation for borrowing may be prestige, whereby speakers of lower status will tend to use more loanwords in order to signal their familiarity with the more prestigious L2. This hypothesis found support in studies with French-English bilinguals by Poplack, Sankoff, and Miller (1988), who, in addition, found that the degree of proficiency in English was also an important predictor of both rate and pattern of loanword usage: The most proficient bilinguals appeared to be the most innovative with regard to borrowing. Boyd (1993) and Stoessel (2000) emphasized that the deciding factor for incorporation strategies and the degree of L1 attrition of individual L2 users is their social networks and the amount and quality of contact with L1 and L2 speakers. Word-finding difficulties documented in Latomaa (1998), Olshtain and Barzilay (1991), and Stoessel (2000) may also be accounted for by inhibition of the L1 lexical items by the more recently recalled and activated L2 counterparts.

L2 Influence on L1-based Concepts

While the study of immigrant speech has long ago established that lexical borrowing and loan translations are prompted by the lack of equivalent concepts in the L1 of L2 users, current scholarship indicates that L2 effects on L1-based conceptual systems may be significantly more far-reaching and pervasive than adoption of new words and expressions. Based on the results of my own work on conceptual change in adult L2 learning as well as on that of others, I have recently suggested that L2 learning in adulthood may result in (a) internalization or borrowing of L2-based concepts (evidenced in lexical borrowing, loan translation and code switching), (b) shift from an L1 to an L2 conceptual domain (evidenced as a shift of category prototypes or category boundaries), (c) convergence of two concepts into one, distinct from the concepts shared by the L1 and L2 speech communities (evidenced as common category boundaries or prototypes), (d) restructuring, whereby new elements are incorporated into a previously existing concept (evidenced in semantic extension), and (e) attrition of previously available concepts (evidenced in deviation from category boundaries) (Pavlenko, 1999). Thus, the focus of this section will be on studies which investigate changes in conceptual representations through verbal tasks, such as elicited discourse, and non-verbal

tasks, such as role play, categorization, and typicality judgments. A summary of the key studies is presented in Table 4.

Table 4: L1 Influence on L1-based Concepts in Late Bilingualism

Studies	Languages (L1/L2)	Ages	Age of Acquisition	Length of Exposure (in Years)	Context of Acquisition	Outcome
Caskey-Sirmons & Hickerson, 1977	Korean/English Japanese/English Hindi/English Cantonese/English Mandarin/English	24-48 20-28 21-42 21-27 20-27	postpuberty	5-25 3-8 several 2-10 3-5	natural for all	borrowing, shift, loss, convergence
Otheguy & Garcia, 1988, 1993	Spanish/English	33+	18+	15+	natural	borrowing, restructuring
Pavlenko, 1999; Pavlenko & Jarvis, 2000	Russian/English	18-26	13-19	3-7	natural	borrowing, shift, convergence, restructuring
Shimron & Chernitsky, 1995	Spanish/Hebrew	adults	postpuberty	3+	natural	shift

Evidence of lexical borrowing has already been discussed in the previous section; it comes from a number of studies which indicate that internalization or borrowing of new concepts may start very soon after initial exposure to the target culture (cf. Pavlenko & Jarvis, 2000). In my own studies, Russian L2 users of English exhibited this internalization in their Russian narratives when using lexical borrowings such as *landlord*, *appointment*, or *boyfriend*, all of which correspond to concepts non-existent in Russian culture (Pavlenko, 1997; Pavlenko & Jarvis, 2000; see also Andrews, 1999). Andrews' (1999) comprehensive study of lexical borrowing and loan translations in the speech of Russian immigrants in the United States suggests that for this group most borrowings can be divided in the following six categories, where new concepts and realities are encountered most often: (a) home/apartment/environs, (b) employment, (c) the automobile, (d) cuisine, (e) daily life, and (f) academe. A series of studies by Otheguy and Garcia (1988, 1993) demonstrate that borrowing is not limited to items not available in the L1. The first study (Otheguy & Garcia, 1988), conducted with Cuban immigrants in Dade County, Florida, demonstrated that in many cases Spanish-English bilinguals did not find traditional Spanish terms congruent with their new circumstances. For instance, the informants indicated that the rather informal and easy-going *solicitud* 'job application' is not really a translation equivalent of the bureaucratic *aplicación*, the term adopted by them in the United States. In the next study (Otheguy & Garcia, 1993), conducted in New York City, the researchers selected a pool of subjects who also had distinct experiences in their two lan-

guages. All were late Spanish-English bilinguals who had lived in their countries of origin at least until the age of 18 and held a job there at least once; subsequently, they moved to New York City, had lived there for more than 15 years, and had seen their children through school in the United States. A series of interviews with the subjects on the same topics were tape-recorded, first in an imaginary Latin American context, and then in a United States context. It was found that there was a highly significant difference ($p < 0.05$) between the proportion of lexical borrowing used in these two contexts: In the American one, the use of neologisms increased four times. The researchers suggested that since the interlocutors remained the same, factors such as social status and language prestige do not appear to be highly explanatory. Instead, they argued that the fact that the subjects were saying different things when discussing the same topic in two different contexts is best explained by divergent conceptualizations shared in the speech communities in question. Once again, they demonstrated that superficial translation equivalents, such *Easter* and *Semana Santa*, *el lunchroom* and *el comedor escolar* 'school dining hall,' *el bildin* and *el edificio* 'building,' involve different visual images and distinct culturally conditioned conceptualizations, which coexist in the conceptual systems of the participants.

While Otheguy and Garcia (1993) suggest that some late bilinguals may have coexisting conceptual representations underlying the use of their two languages, other studies provide evidence of instances of conceptual shift. Caskey-Sirmons and Hickerson (1977), for instance, compared color concepts of monolingual speakers of Korean, Japanese, Hindi, Cantonese, and Mandarin to the concepts of the speakers of these languages who learned English as an L2 in adulthood. The researchers found that in many instances category boundaries shifted for late bilinguals, resulting in convergence and shift toward L2 boundaries, as well as loss and addition of categories. A shift in typicality judgments was found in a study by Shimron and Chernitsky (1995). The researchers compared typicality ratings for items in several categories (sport, fruit, food, science, vegetable, vehicle, beverage, disease) provided by native speakers of Spanish in Argentina, native speakers of Hebrew in Israel, and Jewish immigrants from Argentina currently residing in Israel. They found that a typicality shift took place among immigrant subjects, reflecting the change and adaptation processes that resulted from the cultural transition. Typicality strengthening (i.e., judgment of items as more central and typical for their category) for items ranging from *chemistry*, *geology*, and *avocado* to *malaria*, *basketball*, and *weight lifting* was found to be more common than typicality weakening; it was attributed to particular assimilation strategies and the desire to become full-fledged members of the host society.

Conceptual restructuring is a related phenomenon whereby the shift is partial rather than complete, and the concepts do not fully approximate the L2-based ones but rather acquire some new dimensions. Restructuring is evident in semantic extensions in which L1 words acquire new meaning—and L1-based concepts change their internal structure—under the influence of L2. For instance, in stan-

dard Spanish, *correr* 'to run' has the meaning of moving rapidly, while in the language of Cuban immigrants in the United States it has also acquired the metaphoric meaning of running for office, for example, *correr para gobernador* 'to run for governor' (Otheguy & Garcia, 1988). Similar instances of conceptual restructuring were found in the study by Pavlenko and Jarvis (2000) discussed in the previous section, where some Russian participants were shown to have changed their mental representations of particular concepts, such as *stsena* 'scene' or *sozhitel'nitsa* (literally 'co-habitant,' a pejorative term for *mistress*, used in the L2 meaning of *roommate*).

Yet another process in conceptual change is convergence between the two systems, whereby a unitary system is created, distinct both from L1 and L2. The idea of convergence—oftentimes referred to as shift—is not new: It has been discussed by both Weinreich (1953) and Haugen (1953) and documented by Ervin-Tripp (1961), who found that color categories used by Navaho-English bilinguals differed systematically from the monolingual norms in the respective languages. Ervin-Tripp's (1961) findings were confirmed in a study by Caskey-Sirmons and Hickerson (1977), mentioned previously, where the researchers found that late bilinguals mapped larger total color areas and had less stable color category boundaries and more variable category foci than monolingual speakers.

Finally, the last possible general outcome of the interaction between L1- and L2-based conceptual systems may be the process of attrition of certain concepts, at times accompanied by substitution. This phenomenon is well documented in the literature on non-pathological language loss, in particular with regard to lexicalized concepts (Jaspaert & Kroon, 1992; Olshtain & Barzilay, 1991; Stoessel, 2000; Waas, 1996). Linguistic manifestations of conceptual attrition range from code switching to lexical borrowing to semantic shift. Clearly, not all instances of lexical borrowing, semantic extension, or loan translation provide evidence of conceptual change and, in particular, attrition. I see particularly compelling evidence of L2 influence on L1-based conceptual representations in cases where L2 users categorize non-verbally presented stimuli according to the categories of their L2 in their L1 production, as in many of the examples above.

In sum, the few available studies of conceptual transfer demonstrate that conceptual representations are subject to change in adulthood: New concepts may be added (Caskey-Sirmons & Hickerson, 1977; Otheguy & Garcia, 1988, 1993; Pavlenko, 1997, 1999; Pavlenko & Jarvis, 2000), previously acquired concepts may shift toward L2 conceptual boundaries (Caskey-Sirmons & Hickerson, 1977; Pavlenko, 1999; Pavlenko & Jarvis, 2000; Shimron & Chernitsky, 1995) or undergo convergence or restructuring (Caskey-Sirmons & Hickerson, 1977; Pavlenko,1999; Pavlenko & Jarvis, 2000), while some conceptual distinctions and boundaries may be lost (Caskey-Sirmons & Hickerson, 1977). Just as with lexical and semantic changes, the researchers suggest that the causes of conceptual transfer are to be found in acculturation to the target community, which is predicated on

negotiation of a new conceptual reality (Andrews, 1999; Otheguy & Garcia, 1988, 1993; Pavlenko, 1999).

L2 Influence on L1 in Pragmatics

While the study of L1 transfer in pragmatics is a well-established area of research (cf. Kasper, 1992), the study of L2 influence on L1 pragmatic competence is only beginning. A summary of the few studies that deal with L2 influence in pragmatics is presented in Table 5.

Table 5: L1 Influence on L1 Pragmatics in Late Bilingualism

Studies	Languages (L1/L2)	Ages	Age of Acquisition	Length of Exposure (in Years)	Context of acquisition	Outcome
Latomaa, 1998	English/Finnish	average 42.4	postpuberty	average 11.4	natural	borrowing, shift, and loss
Tao & Thompson, 1991	Mandarin/English	35 and 38	21	14 and 17	natural and formal	borrowing, shift, and loss
Valdes & Pino, 1981	Spanish/English	adults	-	-	natural	convergence
Waas, 1996	German/English	adults	15+	10-20	natural	borrowing, shift, and loss

The loss of L1 pragmatic competence is discussed in an autobiographic narrative by Kyoko Mori (1997), a Japanese woman who has lived in America for 20 years since the age of 20. Mori complains that while in the Midwest she can perfectly well distinguish symbolic invitations from the real ones, this is not the case in Japan:

> In Japan, there are no clear-cut signs to tell me which invitations are real and which are not. People can give all kinds of details and still not expect me to show up at their door or call them from the train station. I cannot tell when I am about to make a fool of myself or hurt someone's feelings by taking them at their word or by failing to do so. (p.10)

Another area of loss in pragmatic competence, identified by Mori (1997), concerns the level of politeness in conversation:

> I can only fall silent because thirty seconds into the conversation, I have already failed at an important task: while I was bowing and saying hello, I was supposed to have been calculating the other person's age, rank, and position in order to determine how polite I should be for the rest of the conversation. (p. 11)

In some cases, Mori (1997) even draws on the pragmatics of her American English milieu: "In my frustration, I turn to the familiar: I begin to analyze the conversation by the Midwestern standard of politeness" (p. 7). More evidence of pragmatic loss in L1 comes from one of the most thorough and comprehensive examinations of L1 loss to date, a previously mentioned study by Waas (1996). In her study of L1 proficiency of German immigrants in Australia, Waas (1996) looked not only at the morphosyntactic but also at the communicative competence of a group of 118 late German-English bilinguals. The interviews with the subjects demonstrated a high level of L1 attrition: Even though they viewed codeswitching negatively, none of the subjects was able to complete the interviews with the researcher without employing the L2. Throughout the interviews, the participants experienced difficulties with conversational fluency in German and their performance lacked in expressiveness and authenticity. These problems manifested themselves in a lack of ad hoc responses, idiomatic phrases, proverbs, and humor; moreover, even such automatized features as reflex responses, repartee, and onomatopoeia were lost by the subjects. Waas (1996) explains her findings by the subjects' voluntary migration, willingness to integrate into the L2 environment, and resulting assimilation (116 of the 118 subjects were employed, with a high concentration of managers, administrators, and other professionals). She also found attitudinal differences with regard to L1 attrition: The most significant differences were between those who affiliated with other German speakers and those who did not. Consequently, the group most affected by L1 loss was the naturalized citizens, and the second was those who had retained their passports but had few (if any) connections with other German speakers in Australia.

Other studies of L2 influence on L1 suggest that this influence may also compromise another type of automatized responses: listener responses, or backchannels. Thus, Tao and Thompson (1991) found that in two separate conversations in Mandarin, two Mandarin L2 users of English, for whom English had become the dominant language, made extensive use of American-English backchannel strategies not found in the speech of monolingual Mandarin speakers or in that of Mandarin-dominant bilinguals. These strategies included such backchannel tokens as *aha*, *uh huh*, *mhm*, and *yeah* or *shi* ('yes' in Mandarin) where Mandarin uses such forms as *ao*, *ai*, and *dui*. Moreover, just like monolingual speakers of English, the two L2 users used backchannel tokens much more frequently than their Mandarin-speaking interlocutors and in positions and with functions reminiscent of English backchannel behavior. For instance, in one of the conversations, the L2 user produced 306 backchanneled utterances, while his interlocutor had only five. Similarly, Latomaa (1998) found that, when speaking English, late English-Finnish bilinguals living in Finland used Finnish greetings and backchannel signals, such as *hei* 'hi,' *joo* 'yes,' *ahaa* 'I see,' or *m* and *joo* while breathing in as an equivalent of the English *yes*. While the discussion above seems to point to borrowing, shift, and loss as the key changes in L1 pragmatic competence, a study of compliment responses by Valdés and Pino (1981) indicates that

the compliment repertoire of adult Mexican-American bilinguals is distinct from the repertoires of monolingual speakers of English and Spanish due to convergence. The authors also suggest that a loss of particular pragmatic distinctions may occur in an immigrant language if these distinctions are not part of the target language community norms.

In sum, the little evidence available to date seems to suggest that pragmatic competence may also be subject to L2 influence, resulting in convergence (Valdés & Pino, 1981) as well as in borrowing, shift, and loss (Latomaa, 1998; Tao & Thompson, 1991; Waas, 1996). The reasons behind this phenomenon are typically considered to be crosslinguistic differences in particular pragmatic norms, acculturation, a high level of L2 proficiency, and intensive daily exposure to L2 pragmatic norms (Latomaa, 1998; Tao & Thompson, 1991; Valdés & Pino, 1981; Waas, 1996).

L2 Influence on L1 in Rhetoric

Similarly to the study of pragmatics, the study of contrastive rhetoric has made significant advances toward examining patterns of L1 influence on L2 performance (cf. Connor, 1996). Very few studies to date deal with the reverse—possible effects of L2 on L1 writing. In my own study of autobiographic narratives of bilingual writers (Pavlenko, 1998), I found that adults who learn their L2 post-puberty and become writers in their second language may experience L2 influence with regard to the perspective taken in their L1 writing. Jan Novak, a late Czech-English bilingual, made the following observation about his Czech writing:

> ...gradually I realized that when drafting [my poems] I was now explaining things that a Czech reader would know. I had started to write for Americans; my linguistic transformation was under way. It was to happen in three delicately unburdening stages, as I moved from writing in Czech about Czechs for Czechs to writing for Americans in English about Americans. (Novak, 1994, p. 264)

Personal insights on the loss of L1 rhetorical patterns also come from Connor (1999), a renowned expert on L1 transfer in L2 rhetoric. After having spent several years in the United States, writing in English, the author went back to Finland, her native country, to coauthor a Finnish-language manual on writing grant proposals in English. She found the process of collaboration extremely difficult, as her views on organization of the material differed from those of her Finnish co-authors. When the first draft of the manual appeared incoherent to her, Connor attempted to argue with her colleagues that the main point should be in the beginning of the paragraph, followed by examples supporting the point. At the end, however, the researcher realized the extent of her own Americanization: The changes she suggested were inappropriate for Finnish rhetoric style. Not surprisingly, no major changes based on her suggestions were included in the final version of the Finnish booklet.

While little empirical evidence is available to date on L2 influence, a recent investigation by Kecskes and Papp (2000) found metalinguistic effects of foreign language (FL) learning on native language development and use. The authors conducted a longitudinal study with Hungarian students between the ages of 14 and 16, FL learners of English, French, or Russian. In the beginning of the study all the students produced Hungarian essays of similar quality; later, however, those receiving intensive (immersion and specialized classes) FL instruction outperformed the control group that was receiving three hours of FL instruction a week. Intensive learners performed better on several written tasks in a number of ways: Their overall language use was more creative, their planning was more elaborated, and their use of subordinate clauses was more frequent, complex, and sophisticated. In addition, it was demonstrated that typological differences between L1 and L2 also had an effect on L1 development: The effects of French and English were found to be stronger than those of Russian. To account for this, Kecskes and Papp (2000) suggest that the transfer from the FL into the L1 is especially intense and positive if the two differ from each other in configuration, since different sentence-organizing principles, such as grammatical word order versus pragmatic word order, result in different learning strategies. Thus, strategies developed in learning French and English, where word order is grammar-driven, complement the ones developed in Hungarian, in which word order is driven by pragmatics, as in Russian. In the present paradigm, the outcome of their study will be interpreted as borrowing in a wider meaning of the word, implying addition and enrichment. The reasons behind L2 influence on L1 rhetoric may be similar to those discussed in the previous sections and include crosslinguistic differences (Kesckes and Papp, 2000) and acculturation (Connor, 1999; Pavlenko, 1998).

POSSIBLE CONSTRAINTS ON L2 INFLUENCE

Based on the factors posited as important in the various studies summarized above, I suggest that L2 influence operates under 10—and possibly more—specific constraints, some of which are different and others similar to those proposed for L1 transfer (Ellis, 1994) and for language loss (Sharwood Smith, 1989). These constraints may be divided into three clusters: (a) *individual* factors (learners' age and onset of L2 learning, learners' goals and language attitudes, language proficiency, individual differences), (b) *sociolinguistic* factors (learning context, language exposure, language prestige), and (c) *linguistic* and *psycholinguistic* factors (language level, typological similarity, developmental factors).

1. *Learners' age* and *onset of L2 learning*: While all learners may be affected by L2 influence, it will be most visible in younger learners (Kecskes & Papp, 2000; Stoessel, 2000; Williams, 1980).

2. *Learners' goals* and *language attitudes*, as well as support for or resistance to their assimilation from the members of the L2 community: L2 influence will be most evident in learners who are attempting to and are allowed to become

legitimate members of their L2 communities and who culturally identify with the members of that community (Major, 1993; Otheguy & Garcia, 1988, 1993; Pavlenko, 1998, 1999; Seliger & Vago, 1991b; Waas, 1996)

3. *Language proficiency*: While Williams' (1980) results indicate that some restructuring may take place for beginning learners, L2 effects will be most visible in learners with high levels of L2 fluency and proficiency (Flege & Eefting, 1987; Major, 1992, 1993; Poplack, Sankoff & Miller, 1988; Tao & Thompson, 1991; Van Hell, 1998a, 1998b).

4. *Individual differences*: In addition to differences in language learning histories and attitudes, L2 effects may also be subject to a number of individual differences, such as phonetic mimicry ability (Major, 1992, 1993) or input sensitivity (Sharwood Smith, 1989).

5. *Learning context*: L2 influence will be most significant in an L2 environment where learners actively interact with the members of the L2 community (Andrews, 1999; Flege, 1987a; Jaspaert & Kroon, 1992; Major, 1992, 1993; Pavlenko, 1999; Pavlenko & Jarvis, 2000; Stoessel, 2000; Waas, 1996); however, some influence can also be seen in FL learning provided there is extensive exposure and a high proficiency level (Flege & Efting, 1987; Kecskes & Papp, 2000; Van Hell, 1998a, 1998b; Van Hell & Dijkstra, 2000).

6. *Length and amount of language exposure*: L2 influence will be most significant in speakers with a high amount of past and present intensive exposure to L2 and low exposure to L1 speech (Boyd, 1993; De Bot, Gommans, & Rossing, 1991; Laeufer, 1997; Major, 1992, 1993; Stoessel, 2000; Tao & Thompson, 1991; Waas, 1996; Williams, 1980); in cases of intensive exposure it may also appear relatively early in the process and has been documented with L2 users who have spent three or more years in the target language environment (Pavlenko & Jarvis, 2000).

7. *Language prestige*: The shift may be most pronounced toward a more valued language (Poplack, Sankoff & Miller, 1988; Weinreich, 1953; Williams, 1980); on the other hand, not even high status will preserve a language from attrition, as seen in the case of American English in Finland (Latomaa, 1998) and Israel (Olshtain & Barzilay, 1991).

8. *Language level*: While evident in all areas, L2 influence may be most conspicuous in phonology (Flege, 1987a, 1987b; Flege & Eefting, 1987; Laeufer, 1997; Leather & James, 1996; Major, 1992, 1993; Williams, 1980) and in the lexicon in the form of lexical borrowing and semantic extension (Jaspaert & Kroon, 1992; Otheguy & Garcia, 1988, 1993; Pavlenko & Jarvis, 2000).

9. *Typological similarity:* Language distance (real or perceived), typological proximity, and structural similarity also could affect L2 influence on L1; just like L1 transfer, L2 influence may be weakened or strengthened by any of these typological factors (Boyd, 1993; Boyd & Andersson, 1991; Kecskes & Papp, 2000; Williams, 1980); it may be particularly evident in the areas of morphosyntax where

the L2 has more coding efficiency (Kecskes & Papp, 2000; Seliger & Vago, 1991b; Sharwood Smith, 1989).

10. *Developmental factors* deserve special consideration in future research, since just as L1 transfer interacts with interlanguage development, L2 influence interacts with both L2 development and L1 attrition, at times leading to restructuring of the acoustic-phonetic, semantic, or conceptual space (Caskey-Sirmons & Hickerson, 1977; Leather & James, 1996; Williams, 1980).

Clearly, this list is just an initial attempt to synthesize the factors that may affect L2 influence on L1, and in the future it will need to be refined and modified not only to include, exclude, or expand particular constraints but also to account for influence of more than one additional language on the L1 in late bilingualism.

CONCLUSION

On the basis of the evidence discussed above, I suggest that given prolonged exposure or a high level of L2 proficiency, L2 influence on L1 can be evidenced in competence, performance, and processing on all language levels—phonology, morphosyntax, lexis, semantics, pragmatics, and rhetoric—and in the underlying conceptual representations (see a summary of the types of influence in Table 6).

Table 6: L2 Influence on L1 in Adulthood

Language areas	Borrowing	Convergence	Shift	Restructuring	Loss
Phonology		X	X		X
Morphosyntax		X (processing)		X	X
Lexicon and Semantics	X	X (including processing)	X		X
Conceptual Representations	X	X	X	X	X
Pragmatics	X	X	X		X
Rhetoric	X		X		X

L2 influence, documented in the studies above, is theorized here as resulting in one or more of the following:

1. Borrowing, documented in the lexicon and semantics (Boyd, 1993; Jaspaert & Kroon, 1992; Latomaa, 1998; Pavlenko & Jarvis, 2000), conceptual representations (Caskey-Sirmons & Hickerson, 1977; Otheguy & Garcia, 1988, 1993; Pavlenko, 1999; Pavlenko & Jarvis, 2000), pragmatics (Latomaa, 1998; Tao & Thompson, 1991; Waas, 1996), and in rhetoric (Kecskes & Papp, 2000).

2. Convergence of L1 and L2 into a unitary system, distinct from both languages documented in phonology (Flege, 1987a; Flege & Eefting, 1987; Major, 1992, 1993; Williams, 1979, 1980), lexicon and semantics (Jaspaert & Kroon, 1992; Van Hell, 1998a, 1998b; Van Hell & Dijkstra, 2000; Yoshida, 1990), morphosyntax (Cook, 1999b), pragmatics (Valdés & Pino, 1981), and conceptual representations (Caskey-Sirmons & Hickerson, 1977; Pavlenko, 1999; Pavlenko & Jarvis, 2000).

3. Shift from L1 to L2 values, documented in phonology (Andrews, 1999; Fischer-Jorgenen, 1968; Flege, 1987a; Major, 1992, 1993; Williams, 1979, 1980), lexicon and semantics (Grabois, 2000; Jaspaert & Kroon, 1992; Latomaa, 1998; Pavlenko & Jarvis, 2000), conceptual representations (Caskey-Sirmons & Hickerson, 1977; Pavlenko, 1999; Pavlenko & Jarvis, 2000; Shimron & Chernitsky, 1995), pragmatics (Latomaa, 1998; Tao & Thompson, 1991; Waas, 1996), and rhetoric (Pavlenko, 1998).

4. Restructuring transfer, documented in morphosyntax (Altenberg, 1991; Boyd & Andersson, 1991; Pavlenko & Jarvis, 2000; Seliger & Vago, 1991b; Skaden, 1999; Stoessel, 2000; Waas, 1996), and in conceptual representtations (otheguy & Garcia, 1998, 1993; Pavlenko, 1999; Pavlenko & Jarvis, 2000).

5. L1 attrition and loss, documented in phonology (Major, 1992, 1993), morphosyntax (Altenberg, 1991; Boyd & Andersson, 1991; De Bot, Gommans & Rossing, 1991; Stoessel, 2000; Waas, 1996), lexicon and semantics (Latomaa, 1998; Olshtain & Barzilay, 1991; Stoessel, 2000), conceptual representations (Caskey-Sirmons & Hickerson, 1977), pragmatics (Latomaa, 1998; Tao & Thompson, 1991; Waas, 1996), and rhetoric (Connor, 1999).

Together, the studies reviewed here provide evidence that adult L1 competence is more flexible than previously assumed and that it may be subject to change in the process of L2 learning. This flexibility presents important implications for linguistic theory and for theories of SLA and bilingualism. To begin with, linguistic theory can no longer avoid engaging with the research in bilingualism and SLA. As Major (1992) pointed out, this avoidance leads to the insufficient basis of linguistic theory, because a theory of language which ignores bilingualism is "based on data that exclude a very significant portion of linguistic phenomena, since perhaps more than half the world's population uses a second language in some meaningful capacity" (p. 191).

In turn, the fields of SLA and bilingualism could productively expand their investigation of transfer effects, looking at transfer and crosslinguistic influence in individual L2 users from a bidirectional perspective. It may be particularly interesting to look into which L2 influence processes take place in which language areas. As seen in Table 6, the studies to date indicate that borrowing may be the key process in L2 influence in the lexicon and semantics, but not, for instance, in phonology or morphosyntax. In turn, restructuring may be dominant in morphosyntax and to a certain degree in conceptual representations but not in other areas, while convergence may surface in phonology and in lexical and syntactic

processing. Thus, it appears that further investigation into psycho- and sociolinguistic aspects of crosslinguistic influence may enrich not only our understanding of second language learning processes and of the functioning of bilingual memory, but also general psycholinguistic theory.

Moreover, I suggest that to document and to understand L2 influence on L1 may be as important for the study of language development as to understand the functioning of L1 transfer, since the fact that L2 starts influencing L1 marks an important developmental stage in the process of second language learning and a beginning of a new type of interaction between the two languages. In many cases evidence of L2 influence on L1 can provide important—albeit indirect—information about areas of linguistic competence currently under restructuring in the process of second language learning. It will not be enough, however, to investigate crosslinguistic influence bidirectionally and to gather more information about L2 transfer effects. These effects cannot be properly understood from the perspective of duplicative competence or with the monolingual view of a bilingual individual in mind. Such a perspective does not allow us to theorize the interaction between the two languages, beautifully described by a late Polish-English bilingual Eva Hoffman:

> When I speak Polish now, it is infiltrated, permeated, and inflected by the English in my head. Each language modifies the other, crossbreeds with it, fertilizes it. Each language makes the other relative. (Hoffman, 1989, p. 273)

I see the multicompetence view, advanced by Cook (1991, 1992), as uniquely equipped to deal with such complex issues as bi- and multidirectionality of crosslinguistic influence in the study of SLA and bi- and multilingualism. It is my hope that future research on crosslinguistic influence will incorporate the notion of L2 influence on L1 and explore this influence in adult L2 users' linguistic and conceptual systems.

ACKNOWLEDGEMENTS

Different versions of this paper were presented at the 1998 International Congress of the Association for Cross-Cultural Psychology and the 1999 TESOL Convention. I thank audiences at these conferences for their helpful comments. I am also indebted to Jeanette Altarriba, Vivian Cook, Scott Jarvis, Terry Odlin, *ial* editors and my two anonymous reviewers for their insightful criticisms and suggestions. Any remaining errors or inaccuracies are strictly my own.

REFERENCES

Altenberg, E. (1991). Assessing first language vulnerability to attrition. In H. Seliger & R. Vago (Eds.), *First language attrition* (pp. 189-206). Cambridge: Cambridge University Press.

Andrews, D. (1999). *Sociocultural perspectives on language change in diaspora: Soviet immigrants in the United States*. Amsterdam/Philadelphia: John Benjamins.

Appel, R., & Muysken, P. (1987). *Language contact and bilingualism*. London/New York: Edward Arnold.

Boyd, S. (1993). Attrition or expansion? Changes in the lexicon of Finnish and American adult bilinguals in Sweden. In K. Hyltenstam & A. Viberg (Eds.), *Progression and regression in language: Sociocultural, neuropsychological and linguistic perspectives* (pp. 386-411). Cambridge: Cambridge University Press.

Boyd, S., & Andersson, P. (1991). Linguistic change among bilingual speakers of Finnish and American English in Sweden: Background and some tentative findings. *International Journal of the Sociology of Language*, 90, 13-35.

Braine, G. (Ed.). (1999). *Non-native educators in English language teaching*. Mahwah, NJ: Lawrence Erlbaum Associates.

Caskey-Sirmons, L. & Hickerson, N. (1977). Semantic shift and bilingualism: Variation in color terms of five languages. *Anthropological Linguistics, 19*, 358-367.

Clyne, M. (1967). *Transference and triggering*. The Hague: Martinus Nijhoff.

Connor, U. (1996). *Contrastive rhetoric: Cross-cultural aspects of second-language writing*. Cambridge: Cambridge University Press.

Connor, U. (1999). Learning to write academic prose in a second language: A literacy autobiography. In G. Braine (Ed.), *Non-native educators in English language teaching* (pp. 29-42). Mahwah, NJ: Lawrence Erlbaum Associates.

Cook, V. (1991). The poverty of the stimulus argument and multicompetence. *Second Language Research, 7*, 103-117.

Cook, V. (1992). Evidence for multicompetence. *Language Learning, 42*, 557-591.

Cook, V. (1997). Monolingual bias in second language acquisition research. *Revista Canaria de Estudios Ingleses, 34*, 35-50.

Cook, V. (1999a). Going beyond the native speaker in language teaching. *TESOL Quarterly, 33*, 185-209.

Cook, V. (1999b, March). Transfer from L2 to L1. Paper presented at the Annual AAAL Conference, Stamford, CT.

Coulmas, F. (Ed.) (1981). *A festschrift for the native speaker*. The Hague: Mouton.

Davies, A. (1991). *The native speaker in applied linguistics*. Edinburgh University Press.

De Bot, K., Gommans, P., & Rossing, C. (1991). L1 loss in an L2 environment: Dutch immigrants in France. In H. Seliger & R. Vago (Eds.), *First language attrition* (pp. 87-98). Cambridge: Cambridge University Press.

Dorian, N. (1989). *Investigating obsolescence: Studies in language contraction and death*. Cambridge: Cambridge University Press.

Ellis, R. (1994). *The study of second language acquisition*. Oxford: Oxford University Press.

Ervin-Tripp, S. (1961). Semantic shift in bilingualism. *American Journal of Psychology, 74*, 233-241.

Fase, W., Jaspaert, K., & Kroon, S. (Eds.) (1992). *Maintenance and loss of minority languages*. Amsterdam/Philadelphia: John Benjamins.

Firth, A., & Wagner, J. (1997). On discourse, communication, and (some) fundamental concepts in SLA research. *The Modern Language Journal, 81*, 285-300.

Fischer-Jorgensen, E. (1968). Les occlusives françaises et danoises d'un sujet bilingue. [French and Danish stops of a bilingual subject] *Word, 24*, 112-153.

Flege, J. (1987a). The production of "new" and "similar" phones in a foreign language: evidence for the effect of equivalence classification. *Journal of Phonetics, 15*, 47-65.

Flege, J. (1987b). Effects of equivalence classification on the production of foreign language speech sounds. In A. James & J. Leather (Eds.), *Sound patterns in second language acquisition* (pp. 9-39). Dordrecht: Foris.

Flege, J., & Eefting, W. (1987). Cross-language switching in stop consonant perception and production by Dutch speakers of English. *Speech Communication, 6*, 185-202.

Gass, S. (1987). The resolution of conflicts among competing systems: A bidirectional perspective. *Applied Psycholinguistics, 8*, 329-350.

Gass, S., & Selinker, L. (Eds.). (1992). *Language transfer in language learning*. (Rev. ed.). Amsterdam/Philadelphia: John Benjamins.

Grabois, H. (2000). The convergence of sociocultural theory and cognitive linguistics: Lexical semantics and the L2 acquisition of love, fear and happiness. In G. Palmer & D. Occhi (Eds.), *Languages of sentiment: Cultural constructions of emotional substrates* (pp. 201-233). Amsterdam/Philadelphia: John Benjamins.

Grosjean, F. (1982). *Life with two languages: An introduction to bilingualism*. Cambridge, MA: Harvard University Press.

Grosjean, F. (1989). Neurolinguists, beware! The bilingual is not two monolinguals in one person. *Brain and Language, 36*, 3-15.

Grosjean, F. (1992). Another view of bilingualism. In R. Harris (Ed.), *Cognitive processing in bilinguals* (pp. 51-62). Amsterdam/New York: North Holland.

Grosjean, F. (1998). Studying bilinguals: Methodological and conceptual issues. *Bilingualism: Language and Cognition, 1*, 131-149.

Haugen, E. (1953). *The Norwegian language in America: A study in bilingual behavior*. Philadelphia: University of Pennsylvania Press.

Hoffman, E. (1989). *Lost in translation: A life in a new language*. New York: Penguin Books.

Jaspaert, K., & Kroon, S. (1992). From the typewriter of A.L.: A case study in language loss. In W. Fase, K. Jaspaert & S. Kroon (Eds.), *Maintenance and loss of minority languages* (pp. 137-147). Amsterdam/Philadelphia: John Benjamins.

Kachru, Y. (1994). Monolingual bias in SLA research. *TESOL Quarterly, 28*, 795-800.

Kasper, G. (1992). Pragmatic transfer. *Second Language Research, 8*, 203-231.

Kecskes, I., & Papp, T. (2000). *Foreign language and mother tongue*. Mahwah, NJ: Lawrence Erlbaum.

Kellerman, E. & Sharwood Smith, M. (1986). *Crosslinguistic influence on second language acquisition*. Oxford: Pergamon Press.

Kramsch, C. (1997). The privilege of the nonnative speaker. *PMLA, 112*, 359-369.

Kramsch, C. (1998). The privilege of the intercultural speaker. In M. Byram & M. Fleming (Eds.), *Language learning in intercultural perspective: Approaches through drama and ethnography* (pp. 16-31). Cambridge: Cambridge University Press.

Laeufer, C. (1997). Towards a typology of bilingual phonological systems. In A. James & J. Leather (Eds.), *Second-language speech* (pp. 325-342). Berlin/New York: Mouton de Gruyter.

Lantolf, J., & Pavlenko, A. (in press). (S)econd (L)anguage (A)ctivity theory: Understanding second language learners as people. In M. Breen (Ed.), *Learner contributions to language learning: New directions in research*. London: Longman.

Latomaa, S. (1998). English in contact with "the most difficult language in the world": The linguistic situation of Americans living in Finland. *International Journal of the Sociology of Language, 133*, 51-71.

Leather, J., & James, A. (1996). Second language speech. In W. Ritchie & T. Bhatia (Eds.), *Handbook of second language acquisition* (pp. 269-316). New York: Academic Press.

MacWhinney, B. (1997). Second language acquisition and the Competition Model. In A. De Groot & J. Kroll (Eds.), *Tutorials in bilingualism: Psycholinguistic perspectives* (pp. 113-142). Mahwah, NJ: Lawrence Erlbaum Associates.

Major, R. (1992). Losing English as a first language. *The Modern Language Journal, 76*, 190-208.

Major, R. (1993). Sociolinguistic factors in loss and acquisition of phonology. In K. Hyltenstam & A. Viberg (Eds.), *Progression and regression in language: Sociocultural, neuropsychological and linguistic perspectives* (pp. 463-478). Cambridge: Cambridge University Press.

Mori, K. (1997). *Polite lies: On being a woman caught between two cultures*. New York: Henry Holt and Company.

Novak, J. (1994). My typewriter made me do it. In M. Robinson (Ed.), *Altogether elsewhere: Writers on exile* (pp. 261-266). New York: Harcourt, Brace, & Company.

Olshtain, E., & Barzilay, M. (1991). Lexical retrieval difficulties in adult language attrition. In H. Seliger & R. Vago (Eds.), *First language attrition* (pp. 139-150). Cambridge: Cambridge University Press.

Otheguy, R., & Garcia, O. (1988). Diffusion of lexical innovations in the Spanish of Cuban Americans. In J.L. Ornstein-Galicia, G.K. Green, & D. Bixler-Marquez (Eds.), *Research issues and problems in U.S. Spanish: Latin American and southwestern varieties* (pp. 203-242). Brownsville: University of Texas.

Otheguy, R., & Garcia, O. (1993). Convergent conceptualizations as predictors of degree of contact in U.S. Spanish. In A. Roca & J. Lipski (Eds.), *Spanish in the U.S.: Linguistic contact and diversity* (pp. 135-154). Berlin: Mouton de Gruyter.

Paikeday, T. (1985). *The native speaker is dead!* Toronto: Paikeday Publishing Inc.

Pavlenko, A. (1997). *Bilingualism and cognition*. Unpublished doctoral dissertation, Cornell University, Ithaca, NY.

Pavlenko, A. (1998). Second language learning by adults: Testimonies of bilingual writers. *Issues in Applied Linguistics, 9*, 3-19.

Pavlenko, A. (1999). New approaches to concepts in bilingual memory. *Bilingualism: Language and Cognition, 2*, 209-230.

Pavlenko, A. & Jarvis, S. (2000). Bidirectional transfer. Manuscript submitted for publication.

Poplack, S., Sankoff, D., & Miller, C. (1988). The social correlates and linguistic consequences of lexical borrowing and assimilation. *Linguistics, 26*, 47-104.

Rampton, B. (1990). Displacing the 'native speaker': Expertise, affiliation, and inheritance. *ELT Journal, 44*, 97-101.

Rampton, B. (1995). *Crossing: Language and ethnicity among adolescents*. London/New York: Longman.

Romaine, S. (1995). *Bilingualism*. (2nd Edition). Oxford: Basil Blackwell.

Seliger, H. (1989). Deterioration and creativity in childhood bilingualism. In K. Hyltenstam & L. Obler (Eds.), *Bilingualism across the lifespan: Aspects of acquisition, maturity, and loss* (pp. 173-184). Cambridge: Cambridge University Press.

Seliger, H. (1996). Primary language attrition in the context of bilingualism. In W. Ritchie & T. Bhatia (Eds.), *Handbook of second language acquisition* (pp. 605-626). New York/San Diego: Academic Press.

Seliger, H., & Vago, R. (Eds.). (1991a). *First language attrition*. Cambridge: Cambridge University Press.

Seliger, H., & Vago, R. (1991b). The study of first language attrition: An overview. In H. Seliger & R. Vago (Eds.), *First language attrition* (pp. 3-15). Cambridge: Cambridge University Press.

Selinker, L. (1992). *Rediscovering interlanguage*. New York: Longman.

Sharwood Smith, M. (1989). Crosslinguistic influence in language loss. In K. Hyltenstam & L. Obler (Eds.), *Bilingualism across the lifespan: Aspects of acquisition, maturity, and loss* (pp. 185-201). Cambridge: Cambridge University Press.

Shimron, J., & Chernitsky, R. (1995). Typicality shift in semantic categories as a result of cultural transition: Evidence from Jewish Argentine immigrants in Israel. *Discourse Processes, 19*, 265-278.

Singh, R. (Ed.). (1998). *The native speaker: Multilingual perspectives*. Thousand Oaks: Sage.

Singh, R., Lele, J., & Martohardjono, G. (1988). Communication in a multilingual society: Some missed opportunities? *Language in Society, 17*, 43-59.

Skaden, H. (1999, April). *First language attrition and linguistic creativity*. Paper presented at the Second International Symposium on Bilingualism, Newcastle upon Tyne, England.

Sridhar, S. (1994). A reality check for SLA theories. *TESOL Quarterly, 28*, 800-805.

Stoessel, S. (2000, September). *Multilingual social networks: A sociolinguistic perspective on first language attrition in immigrants*. Paper presented at the Second Language Research Forum (SLRF 2000) Conference, Madison, WI.

Tao, H., & Thompson, S. (1991). English backchannels in Mandarin conversations: A case study of superstratum pragmatic 'interference.' *Journal of Pragmatics, 16*, 209-223.

Valdés, G., & Pino, C. (1981). Muy a tus ordenes: Compliment responses among Mexican-American bilinguals. *Language in Society, 10*, 53-72.

Van Hell, J. (1998a). *Cross-language processing and bilingual memory organization*. Unpublished doctoral dissertation, University of Amsterdam.

Van Hell, J. (1998b, April). *Does foreign language knowledge influence native language performance?* Paper presented at the 43rd Annual Conference of the International Linguistic Association, New York City.

Van Hell, J., & Dijkstra, T. (2000). *Foreign language knowledge can influence native language performance: Evidence from trilinguals*. Manuscript submitted for publication.

Waas, M. (1996). *Language attrition downunder: German speakers in Australia*. Frankfurt: Peter Lang.

Weinreich, U. (1953). *Languages in contact*. Linguistic Circle of New York.

Wierzbicka, A. (1992). *Semantics, culture, and cognition: Universal human concepts in culture-specific configurations*. New York/Oxford: Oxford University Press.

Williams, L. (1979). The modification of speech perception and production in second-language learning. *Perception and Psychophysics, 26*, 95-104.

Williams, L. (1980). Phonetic variation as a function of second-language learning. In G. Yeni-Komshian, J. Kavanagh, & C. Ferguson (Eds.), *Child Phonology: Volume 2. Perception* (pp. 185-215). New York: Academic Press.

Wong Fillmore, L. (1991). When learning a second language means losing the first. *Early Childhood Research Quarterly, 6*, 232-346.

Yoshida, K. (1990). Knowing vs. behaving vs. feeling: Studies on Japanese bilinguals. In L. Arena (Ed.), *Language Proficiency* (pp. 19-40). New York: Plenum Press.