

Bidirectional Transfer

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This paper argues for a refinement in the traditional approach to transfer in SLA, where transfer is generally investigated as the unidirectional influence of native (or other language) knowledge on the acquisition and use of a second language. We show that transfer can be bidirectional, influencing an individual's use of both the L1 and L2. We further argue that bidirectional transfer can be simultaneous or synchronic and base this conclusion on the results of our analysis of oral narratives produced by 22 Russian L2 users of English, who learned English post-puberty after having lived in the USA for 3–8 years. The narratives, collected in Russian and English, demonstrate that crosslinguistic influence works both ways in the oral production of these L2 users: while Russian continues to influence their English, their English has begun to influence their Russian as well. We discuss the factors that may influence the directionality and amount of transfer in these L2 users, as well as ways in which various types of transfer are similar and different in their two languages. Then, we outline the implications of our findings for the future study of transfer in SLA and bilingualism.

Transfer in adult language learning has traditionally been understood to mean the effects of the first language (L1) or some previously learned language on the acquisition and use of a second language (L2). This understanding of transfer is offered in the revised edition of Gass and Selinker's classic volume: 'for most researchers, language transfer is 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 and Selinker 1992: 234). In the present paper we expand the understanding of transfer in SLA to include *bidirectionality*, that is the notion that in the oral and written production of the same adult L2 user, crosslinguistic influence can simultaneously work both ways, from L1 to L2, and from L2 to L1. We will demonstrate that in the oral narratives of Russian L2 users of English, who learned English as teenagers and adults, transfer is exhibited in the use of both the L1 and L2. We will also examine similarities and differences between the two types of transfer in this population and discuss the relevance of bidirectionality for the study of SLA. Throughout our discussion, we will use the terms 'language transfer' and 'crosslinguistic influence' interchangeably to refer to such diverse phenomena as 'transfer', 'interference', 'borrowing,' and L2-related aspects of language attrition (Sharwood Smith and Kellerman 1986: 1).

THEORETICAL FRAMEWORK FOR THE STUDY OF BIDIRECTIONAL TRANSFER

In this study we explore the bidirectionality of transfer in late bilinguals' use of both of their languages. This is a phenomenon that has received very little empirical attention in the past, even though bidirectionality itself is not really a new notion in the study of second language learning and use. In the early days of the study of bilingualism, Weinreich defined interference as 'those instances of deviation from the norms of either language which occur in the speech of bilinguals as a result of their familiarity with more than one language' (Weinreich 1953: 1). Similarly, Selinker, in his classic paper on transfer, noted that 'one would eventually wish to include in a comprehensive and explanatory theory of language transfer . . . the phenomenon of influence upon the native language by a foreign language' (Selinker 1969: 68). In the years following Selinker's insightful petition, however, none of the key anthologies on language transfer has included work on the bidirectionality of transfer in adult L2 users (see, e.g., Dechert and Raupach 1989; Gass and Selinker 1992; Kellerman and Sharwood Smith 1986). We see this oversight as a result of the different foci characteristic of transfer research in the fields of bilingualism and SLA. The field of bilingualism does investigate bidirectional transfer, although mainly in childhood and simultaneous bilingualism (e.g. Müller 1998). When it comes to late bilinguals (people who have acquired a second language post-puberty), oftentimes users of a language contact or immigrant language variety, the field focuses on societal rather than on individual transfer patterns, combining speech samples from several generations of speakers in a particular community (e.g. Andrews 1993, 1999; Py 1986; Silva-Corvalan 1991), which makes it impossible to determine what changes occur in the competence of the first generation immigrants. In contrast, while the field of SLA focuses on various effects of the L1 (or a previously acquired L2) occurring in the language of individual adult L2 users, this type of research is often predicated on the assumption that once the speaker's L1 system has 'matured', his or her L1 competence is no longer subject to change (e.g. MacWhinney 1997). It is only recently that SLA scholars started paying attention to ways in which the L2 could affect the L1 in adult L2 users (Major 1992; Waas 1996; for a review of recent work see Pavlenko 2000). In summary, as a result of different foci of attention in the two fields, transfer in post-puberty L2 learners and users has mostly been studied as the influence of the L1 on L2 performance, and not as a bidirectional phenomenon.

One recent example of how directionality assumptions could influence one's research hypotheses, subject selection, and, consequently, findings, is a recent study by Berman (1999). Berman's study examined the narrative language proficiency of three groups of Israeli adults: monolingual speakers of Hebrew, Hebrew-English bilinguals (native-born Israelis), and English-Hebrew bilinguals (immigrants to Israel from the USA). The goal of the

study was to paint a picture of bilingual proficiency/proficient bilingualism and to see what 'prevents people who are proficient speakers and narrators in one language from producing native-like texts in another' (Berman 1999: 187). The researcher's hypothesis was that the narratives collected would not provide 'evidence of fully balanced bilingualism' (Berman 1999: 187) and that both the English narratives of Hebrew–English bilinguals and the Hebrew narratives of English–Hebrew bilinguals would exhibit 'non-native locutions'. While the actual study is quite interesting in design and informative in its findings, what is most remarkable for our purposes is the fact that two American subjects were dropped from the analysis 'because their Hebrew (ostensibly L2) texts were more native-like than their English texts' (Berman 1999: 190). If these data were to be included, the picture of the bilingual proficiency continuum could have been more complete and the answer to the original question could have become: 'nothing prevents some people from producing native-like texts in their second language'. It is our firm belief that only by investigating the production of all types of subjects—including those whose performance may challenge the general view of L2 users as 'non-native like'—will we be able to paint a satisfactory picture of the bilingual proficiency continuum. We find this approach to be more inclusive than the common practice of investigating L2 users primarily in terms of how they differ from monolingual native speakers of the target language (cf. Cook 1999; for further discussion of how this approach applies to the study of language transfer, see Jarvis 2000).

Consequently, we frame our discussion of bidirectional transfer within the multicompetence framework which proposes that people who know more than one language have a distinct compound state of mind that is not equivalent to two monolingual states (Cook 1991, 1992). A similar argument has been advanced by Grosjean (1992, 1998a), who has stated 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. We suggest that the multicompetence view offers a much broader framework for investigation of crosslinguistic influence, and that within this framework bidirectional crosslinguistic influence can be discussed and understood as a complex process, which may affect not only additionally learned languages, but also L1 competence.

We will use the term *bidirectionality* throughout this paper to refer to the two-way interaction between the two linguistic systems of an L2 user (i.e. L1 influence on the L2 and L2 influence on the L1). In the empirical part of our study, we will demonstrate such interaction in the language production of individuals who have acquired their L2 post-puberty (i.e. in the type of situation where simultaneous bidirectionality has largely remained ignored). Our use of the term *bidirectionality* will differ from the way it has been used previously in the SLA literature, to refer to the facility with which speakers of

language A tend to learn language B, and speakers of language B tend to learn language A (Gass 1987; Gass and Selinker 1992). Also, in referring to our participants, we will adopt the term 'L2 users' suggested by Cook (1999) and predicated on the understanding that the individuals in question may still be in the process of acquiring some aspects of their L2 (as L2 learners) and that at the same time they are using their two languages on a regular basis (as late bilinguals).

METHODOLOGY

Objective

The purpose of the present study is to examine the nature of bidirectional transfer in the L1 and L2 narratives of Russian L2 users of English by describing the areas of language use where it occurs, by categorizing, quantifying, and comparing the types of transfer exhibited in each language, and by considering the implications that bidirectional transfer holds for the fields of SLA and bilingualism.

Subjects

Twenty-two Russian L2 users of English participated in the study, 10 males and 12 females (see Table 1 for summary information on the participants). The participants were selected on the basis of questionnaires administered to a larger body of Russian–English bilinguals, as the only ones who had minimal to no exposure to English prior to their arrival in the USA. All were middle-class urban adults, students at Cornell University, between the ages of 18 and 26 (mean age = 20.3). All had learned their English after arriving in the USA, post-puberty, between the ages of 13 and 19 (mean age of arrival (AOA) = 14.9), through ESL classes, public or private school attendance, and naturalistic exposure. Twenty arrived as immigrants with their families, and two as international students. By the time of the study the participants had spent between 3 and 8 years in the USA (mean length of exposure (LE) = 5.4), interacting both in Russian and English on a daily basis. According to the background questionnaires they filled out, they had continued to use Russian with their families, relatives, and Russian-speaking friends since their arrival in the USA, and used English with English-speaking friends, and for educational and everyday interactional purposes. All were literate in both languages and considered themselves to be native speakers of Russian and fluent, but not native-like, speakers of English. Several commented that they were 'working hard on improving their English.' Prior to entering Cornell University, all participants scored higher than 600 on the TOEFL test (paper version), and, at the time of the experiment, all were fluent enough in English to be enrolled in regular undergraduate and graduate classes. None were enrolled in the Intensive English Language Program.

Table 1: Study participants

Participant	Gender	Age	Age of arrival	Length of exposure/stay in the USA
B1	male	20	14.5	5.5 yrs
B2	male	18	15	3 yrs
B3	male	18	15	3 yrs
B4	female	26	19	7 yrs
B5	female	19	13	6 yrs
B6	female	19	13	6 yrs
B7	male	20	16	4 yrs
B8	male	21	13	8 yrs
B9	male	19	14	5 yrs
B10	male	22	19	3 yrs
B11	female	21	18	3 yrs
B12	female	19	16	3 yrs
B13	male	21	13	8 yrs
B14	male	20	13	7.5 yrs
B15	female	21	14.5	6.5 yrs
B16	female	20	13	7 yrs
B17	female	19	16	3 yrs
B18	female	20	13	7 yrs
B19	male	26	19	7 yrs
B20	female	19	15	4 yrs
B21	female	19	13	6 yrs
B22	female	19	13	6 yrs

Mean age = 20.3; range 18–26

Mean age of arrival = 14.9; range 13–19

Mean length of exposure = 5.4 yrs

Method

Four 3-minute long films with a sound track but no dialogue were used for narrative elicitation purposes. Previously, films have been used successfully for narrative elicitation purposes in the crosslinguistic study of narrative production (Chafe 1980; Tannen 1980, 1993) and in the study of SLA (Bardovi-Harlig and Reynolds 1995; Becker and Carroll 1997; Jarvis 1998; McClure 1991; Perdue 1993). This methodology, which presents subjects with a uniform non-verbal prompt, is a variation of the better-known picture task elicitation procedure. Both of these types of data elicitation allow the researcher to keep the data more or less homogeneous by holding the semantic referents constant (in contrast to elicited personal narratives, which exhibit significantly more variation). Using films rather than pictures, however, has the advantage of making the storytelling task less artificial and more similar to spontaneous narratives (Tannen 1980, 1993). By using this technique and by holding our experimental conditions relatively constant (see below), we were able to elicit narrative data that we believe are optimal in terms of comparability across subjects and language conditions. On the other hand, the narratives elicited through this approach were relatively short, so in the future it would be helpful to elicit a larger variety and longer stretches of data.

The four films used as stimuli in the present study were specifically made by one of the researchers for the purpose of investigating the language use of Russian–English bilinguals while examining the potential effects of content and context variables. Prior studies, that have used the same stimuli with Russian and American English monolinguals (Pavlenko 1997, 1999, 2002), have shown differences in participants' interpretation of the content of the four films and have linked them to differences in the conceptualization of emotions and private matters between the two speech communities. Two of the films, *The Ithaca Story* and *Kiev Story*, portray a situation interpreted by monolingual American participants as an invasion of personal space: a stranger sitting down too close to someone. Monolingual Russians, in contrast, perceive the situation as a pick-up attempt. The other two films, *The Letter* and *Pis'mo*, portray a situation that is perceived by monolingual Americans as a violation of informational privacy and by monolingual Russians as an attempt to invade someone's emotional and spiritual world: a roommate reading someone else's letter without their permission. The first film of each pair was made in the USA, and the second in the former Soviet Union, to examine potential context effects. Contrary to Tannen's (1980, 1993) finding that Americans and Greeks do not perform comparably on narrative elicitation tasks, Pavlenko's (1997) study established that the film recall tasks used in the present study are performed similarly by young middle-class Russian and American students: both groups appeal to similar narrative frames and rhetorical devices in their recalls.

The participants were randomly assigned to four groups and interviewed

individually (see Figure 1). The subjects in the first group ($n = 6$) were asked to recall *The Ithaca Story* in English and *The Letter* in Russian (participants B1–B6). The subjects in the second group ($n = 6$) did the reverse, recalling *The Ithaca Story* in Russian and *The Letter* in English (participants B7–B12). The subjects in the third group ($n = 6$) were asked to recall *Kiev Story* in English and *Pis'mo* in Russian (participants B13–B18). The subjects in the fourth group ($n = 4$) did the reverse, recalling *Kiev Story* in Russian and *Pis'mo* in English (participants B19–B22). In order to control for context effects, each participant was shown two films made in the same context (i.e. two films made in the USA, or two films made in the former USSR). In order to control for language mode by using a balanced design, half of the participants in each group were greeted and interviewed in English prior to the elicitation procedure, and the other half were greeted and interviewed in Russian. Subsequently, the participants who started out in English proceeded to perform the first recall task in English, and the participants interviewed in Russian performed the first task in Russian. Each participant was shown one film first, then given a portable tape recorder and the following instructions, either in English or in Russian: 'Please, tell what you just saw in the film!' '*Pozhaluista, rasskazhite chto vy videli v fil'me*'. After the first recall was finished, the researcher attempted to change the participants' language mode by talking to them for a while in the other language. Then, they were shown the second film and performed the recall task in the other language. All spoke directly into the tape recorder so that no social interaction with the interviewer would influence their recall.

This procedure allowed us to collect 44 narratives, two from each participant. The mean length of the narratives in terms of number of clauses was 34.6 for the English narratives and 34.5 for the Russian narratives. In terms of word totals, the English narratives were slightly longer than the Russian ones (English mean = 196 words (180 without articles); Russian

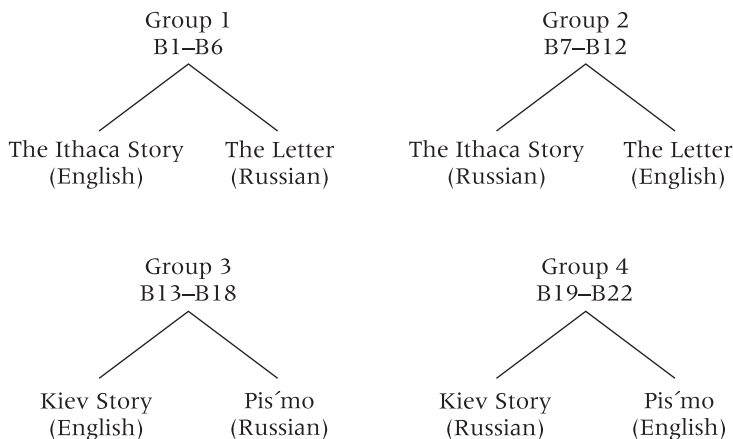


Figure 1: Research design

mean = 155 words). The total number of words was 4,320 in the English corpus, and 3,416 in the Russian. All of the narratives were transcribed, and instances of transfer were identified, categorized, and analysed for potential effects of the order of presentation of the films and the context in which the action occurred. To make sure that the instances of transfer identified in the study were indeed due to transfer and not, for instance, to a particular register, dialect, or lexical variation, the narratives elicited from the L2 users were compared with 80 narratives elicited from monolingual speakers of American English (20 narratives per film) and 80 narratives elicited from monolingual speakers of Russian (20 narratives per film) in the previous studies (Pavlenko 1997, 2002).

CATEGORIES OF ANALYSIS

For practical reasons, we limited our analysis to the transcribed data, and therefore did not take phonological transfer into consideration (for an insightful discussion of late bilinguals' phonology, see Major 1992; for a discussion of the phonology of Russian immigrants in the USA, see Andrews 1999). Our analysis concentrated instead on transfer in morphosyntax, lexis, and semantics, which we conceptualized in terms of the paradigmatic and syntagmatic relations illustrated in Figure 2.

The *paradigmatic* dimension, in general, refers to sets of linguistic units that are all members of a definable category (i.e. a paradigm), but which differ in some crucial way (see, e.g., Chandler 2002; Jakobson and Halle 1956; Saussure 1974). Paradigmatic relations are also exclusive in the sense that the choice of one member of a paradigm at a particular point excludes the choice of all other members of that paradigm at that point (e.g. Silverman and Torode 1980). Examples of various types of paradigms include (1) the letters of an alphabet; (2) the possible inflections of a given word (e.g. different grammatical case forms of a noun); and (3) a set of synonymous words. In some cases (e.g. letters of the alphabet, noun case) the selection of a member of a paradigm is rigidly determined by convention and by well-formedness rules, whereas in other cases (e.g. sets of synonyms) selection among members of a paradigm has more to do with style, register, and personal preference.

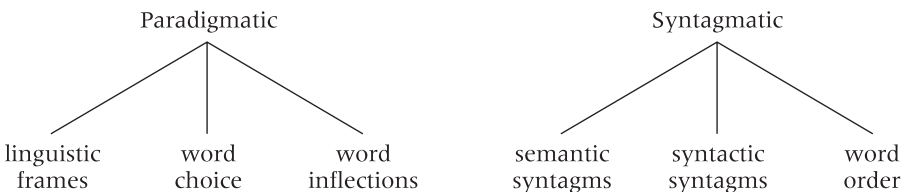


Figure 2: Scheme of paradigmatic and syntagmatic relations relevant to the present study

Our scheme in Figure 2 comprises three types of paradigmatic relations that we set out to investigate in relation to transfer. These relations form a hierarchy from general to specific. The first category, *linguistic frames*, involves the selection of structural alternatives (e.g. grammatical classes) for expressing conceptualized messages (Levelt 1989; Slobin 1991). A commonly cited example of differences related to linguistic frames is the tendency of certain languages, such as Spanish, to encode directionality into verbs (e.g. *entrar* 'enter'), whereas other languages, such as English, tend to express directionality through prepositions (e.g. *go INTO*), though both options are often possible in both types of languages (Slobin 1993). When a language allows both options, the speaker's decision to express directionality through a verb versus a preposition involves selecting from among members of a set of substitutable structural alternatives—that is, between members of a paradigm of linguistic frames for expressing directionality. The second type of paradigmatic relation, *word choice*, involves the selection of specific words within those frames. In our view, linguistic frame selection differs from word choice in the sense that the former entails the choice of grammatical class (e.g. the selection of a verb instead of a preposition for expressing directionality), whereas the latter involves the selection of a specific word within that class (e.g. choosing between the verbs *enter*, *infiltrate*, *penetrate*, etc.).¹ The third category, *word inflections*, involves the precise grammatical forms that those words will take, and can be viewed as entailing selection from among the members of a word's inflectional paradigm, whether it involves verb conjugation (e.g. *enter*, *entered*, *entering*), nominal or pronominal case (e.g. *boy*, *boys*, *boy's*, *boys'*; *he*, *him*, *his*), or any other types of grammatical forms that a word may take in a given language (e.g. agreement markers, grammatical gender markers, enclitic particles). In the present investigation we are interested in all three levels of paradigmatic relations because each represents an area where salient differences can be found between languages and where crosslinguistic influence may be hypothesized to occur.

The *syntagmatic* dimension represented in Figure 2 is different from the paradigmatic dimension in the sense that syntagmatic relations involve linearly ordered combinations of linguistic units (by units, we mean individual words or structures), whereas paradigmatic relations involve sets of substitutable linguistic units (e.g. Chandler 2002). The choice of *in* versus *into* in the sentence *She ran in the house*, for example, involves a paradigmatic relationship between two substitutable alternatives that cannot co-occur in a particular instance of language production. The relationship between the words *in the house*, on the other hand, is syntagmatic precisely because these words do co-occur, and because their co-occurrence is governed by rules of linear ordering (which may be stricter in some languages and more flexible in others). Now, some degree of overlap does exist between the syntagmatic and paradigmatic dimensions of language, especially with respect to combinations of words that function as units (e.g. compound words, idioms, NPs, PPs). For example, the idiom *under the weather* could be viewed as representing either

the paradigmatic or syntagmatic dimension of language depending on whether the focus is on its substitutability with other words or phrases (e.g. *sick*), or on the rules that determine the linear ordering of words within this phrase (i.e. *under + the + weather*) and/or the types of words and structures that this phrase can co-occur with (e.g. *be + under the weather, feel + under the weather*). The crucial difference between the paradigmatic and syntagmatic dimensions is clearly one of perspective: selection versus combination (Jakobson and Halle 1956). To avoid confusion, in the present study we will use the term paradigmatic when focusing on the occurrence of individual words and structural units, and will use the term syntagmatic when the combination of words and/or structural units is at issue.

The first type of syntagmatic relation shown in Figure 2 involves semantic syntagms. In the present study, *semantic syntagms* are defined as fixed combinations of words or word roots whose combination is semantically determined. Examples include compound words (e.g. *horseshoe, toy factory*), idioms (e.g. *no strings attached, icing on the cake*), and lexical collocations (e.g. *launch a ship, submit an article, salt and pepper*). The second type of syntagmatic relation represented in Figure 2 concerns *syntactic syntagms*, or linearly ordered strings of words that form syntactic units (e.g. NP, PP, VP) and whose combination is determined grammatically and not semantically. Examples of syntactically determined syntagmatic relations include but are not limited to the relationships between head words (e.g. nouns, verbs, and adjectives) and the functional categories they subcategorize for (e.g. determiners, direct objects, prepositional phrases). The final type of syntagmatic relation that we have included in our scheme in Figure 2 concerns *word order*, or the ordering of syntactic structures within the sentence. These three types of syntagmatic relations can differ substantially from one language to the next, and therefore have clear implications for transfer.

In our analysis, we will use the scheme in Figure 2 as the basis for our analytical framework. Within this scheme, we will focus on nine specific categories of potential transfer that we have identified through a contrastive analysis of the paradigmatic and syntagmatic domains of the two languages in question, Russian and English. These categories are listed in Figure 3 beneath the paradigmatic and syntagmatic relations they represent. (Undoubtedly, a different combination of languages would have different points of contrast, and would therefore suggest different potential categories of ostensible transfer, even within the same schematic framework.) In the following paragraphs we describe each category in more detail and present hypotheses concerning its expected directionality in our data. Our categories are based on both contrastive analysis and previous research with Russian L2 users of English (Andrews 1999; Schmitt 2000; Wenzell 1989), while our hypotheses with regard to the directionality of transfer are formulated based on previous research with populations similar to ours, that is, adult or post-puberty learners of a second language (for a review, see Pavlenko 2000). In particular, this research shows that adult L2 users are likely to exhibit L1 transfer in

essentially all language areas, while L2 influence on L1 is most likely to appear first in the form of lexical borrowings and semantic extension.

Our first category of analysis is *framing transfer*, or transfer involving the choice of a linguistic frame (i.e. structural category or grammatical class) for expressing a mental representation (e.g. Levelt 1989; Slobin 1991, 1993, 1996). L1-induced framing transfer has received a good deal of attention in the literature (Becker and Carroll 1997; Harley 1989; Kellerman 1995, 2001; Slobin 1993; Stam 1999), especially as it pertains to the expression of directionality. Since both English and Russian are satellite-framed languages where directionality, or motion path, is expressed through prepositions (and prefixes in the case of Russian), we do not hypothesize any error-inducing transfer effects in the expression of directionality. We do, however, hypothesize possible crosslinguistic influence in our participants' references to emotional states. Emotions in English are typically expressed as passive states through the use of adjectives (e.g. *She was SAD*), whereas in Russian they are more commonly expressed as active processes through the use of verbs (e.g. *Ona grustila* literally: 'she was being sad') (Pavlenko 2002; Wierzbicka 1991, 1999). Based on these differences and on the fact that both languages contain the two types of structural alternatives (even though only one is preferred), we hypothesize that we will observe L1 > L2 framing transfer in our participants' expression of emotions in English, especially as it pertains to the selection of verbs where adjectives would be more conventional. Previous research does not provide any evidence of L2 > L1 framing transfer that we are aware of, so we hypothesize that framing transfer will be unidirectional (i.e. L1 > L2) in our data.

The second and third categories involve transfer related to word choice: semantic extension and lexical borrowing. *Semantic extension*, also known as loan shift, usually refers to extension in the use of L2 words and expressions to include the meaning of a perceived L1 translation equivalent; this phenomenon has been extensively documented in the study of L1 semantic transfer (Ard and Homburg 1992; Hasselgren 1994; Ijaz 1986; Jarvis 1998;

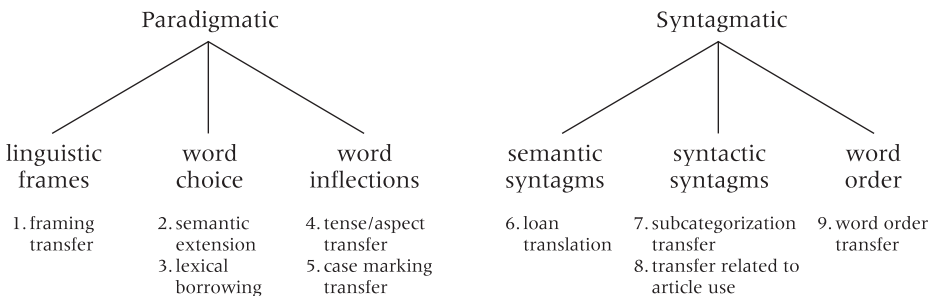


Figure 3: Relationship between our categories of analysis and the paradigmatic and syntagmatic relationships they represent

Kellerman 1978, 1986; Ringbom 1987). Semantic extension also works in the opposite direction, from L2 to L1; this type of influence has been documented both in immigrant populations and in the L1 use of individual adult L2 users (Andrews 1999; Caskey-Sirmons and Hickerson 1977; Jaspaert and Kroon 1992; Latomaa 1998). For instance, whereas in standard Russian the word for a personal camera is *fotoapparat* and the word for film used in photography or in the picture industry is *plenka*, in the speech of Russian immigrants in the USA these words are being replaced, respectively, by *kamera* (which refers to video, TV or movie camera in standard Russian) and *fil'm* (which refers exclusively to a movie in standard Russian) through the process of semantic extension influenced by the meanings of L2 lexical counterparts (Andrews 1999: 88). Based on the fact that semantic extension has been documented both as L1 and L2 transfer, we hypothesize that we will find examples of semantic extension working both ways (L1 > L2 and L2 > L1) in our data.

Lexical borrowing refers to the use of a phonologically and sometimes morphologically and/or orthographically adapted word from one language in the other language, often when the recipient language is perceived as lacking a semantic equivalent of that word (e.g. the use of nouns such as *kesh* 'cash' by Russian immigrants in America (Andrews 1999)).² Lexical borrowing has been documented in relation to L1 > L2 and L2 > L3 transfer (Ringbom 1978, 1987). Most often, however, lexical borrowing has been discussed in the study of L2 influence on L1 as particularly typical of immigrant bilingualism, wherein L2 users readily adopt available L2 words, most often nouns, to refer to new objects and concepts specific to the L2 environment and culture (Boyd 1993; Jaspaert and Kroon 1992; Latomaa 1998; Otheguy and Garcia 1993; Seliger and Vago 1991). In the speech of Russian L2 users of English, lexical borrowing has been extensively documented by Andrews (1993, 1999). The directionality of transfer in this case is influenced both by typological similarity and by context, whereby words are most likely to be borrowed from a language that is already familiar to the interlocutors (Otheguy and Garcia 1993). Therefore, we believe that lexical borrowing is most likely to appear as L2 influence on L1 in the production of our participants, as they are part of a minority community in a monolingual context in which their Russian interlocutors have no problems interpreting L2 lexical borrowings but their American interlocutors would not be able to interpret borrowings from Russian. However, since the study placed all participants in a bilingual mode with a bilingual researcher, we hypothesize that the participants may also resort to L1 > L2 lexical borrowing, in particular in the description of the two films depicting Russian contexts.

The fourth and fifth categories involve transfer related to word inflection, or, more specifically, (1) transfer related to the use of *tense and aspect* inflections with verbs; and (2) transfer related to the use of *nominal case* inflections with nouns and pronouns. Tense and aspect have been shown to be important for Russian L2 users of English by Wenzell (1989), who demonstrated that beginning and intermediate Russian learners of English

transfer aspectual categories from Russian, using English past forms to mark the perfective aspect and all other verb inflections to mark the imperfective aspect. Although our participants are more advanced learners of English than those of Wenzell, we hypothesize that we may still see some influence of the Russian aspectual system on our participants' use of tense markers in English. We do not anticipate finding any ostensible influence of English tense on their use of Russian aspect, however, given that L2 > L1 transfer related to verb inflection has not been documented among L2 users comparable to our participants in terms of length of exposure to L2 (Pavlenko 2000).

Turning now to case marking, according to previous research this type of transfer also appears to be mainly unidirectional, from L1 to L2, in the speech of adult L2 users. L1-induced case marking transfer has been documented by Jordens (1992), who found that differences in L2 German case marking of Dutch and American learners were linked to differences in their L1-based conceptualizations of 'definiteness': for Dutch learners definiteness was linked to identifiability, while for Americans it was related to referential prominence. L2 > L1 case marking transfer has been documented to date mainly with bilingual children for whom L2 is becoming dominant. In particular, Schmitt (2000) found several instances of inappropriate case marking and of the lack of obligatory case marking in the Russian speech of immigrant Russian children in the USA. In the research related to adult L2 users there is a lack of evidence for L2 > L1 case marking transfer, and thus we hypothesize that we will not encounter this type of transfer in our data. With respect to L1 > L2 case marking transfer, on the other hand, it is possible that the differences between the case systems of English (three cases) and Russian (six cases) may lead Russian L2 users of English to attempt, at least initially, exclusive 'one-to-one' mapping of Russian cases onto English ones, for instance, associating the pronoun 'him' with the Dative case ('*emu*') but not the Accusative ('*ego*'). However, we expect these results to be quite subtle as they cannot be seen in the incorrect use of the English case markers; the most likely result is avoidance of accusative pronouns. Thus, we hypothesize that case marking transfer may be subject to L1 > L2 influence but that we may not be able to see clear evidence of this in the data collected in this study.

Our sixth category of analysis involves *loan translations* (i.e. calques), which we operationally define as the use of literal translations of compound words, idioms, and lexical collocations from the source language (e.g. American Finns' use of *put the door shut* on the model of the L1 equivalent 'laita ovi kiinni'; Latomaa 1998). This type of transfer has been documented both in L1-influenced L2 production (Biskup 1992; Hasselgren 1994; Ringbom 1987) and in L2-influenced L1 production (Jaspaert and Kroon 1992; Latomaa 1998; Otheguy 1993). Both Andrews (1999) and Schmitt (2000) have documented this type of transfer in the Russian speech of Russian-English bilinguals. Based on these findings, which show numerous instances of both L1- and L2-based loan translations, we hypothesize that loan translations may appear in both languages of our Russian L2 users of English.

Our seventh and eighth categories of analysis involve transfer related to the composition of syntactic syntagms, more specifically the functional categories that verbs and adjectives subcategorize for (i.e. *subcategorization transfer*), and the articles that are grammatically requisite within individual NPs (i.e. *transfer related to article use*). Subcategorization transfer is discussed in a seminal article by Adjemian (1983), who cites as an example francophone Canadians' use of *They want to fight themselves against this (tuition increase)* (French: 'Ils veulent se battre contre cette [hausse]'), in which the reflexive pronoun *themselves* shows up in English because the learners have imposed the subcategorization frame of the French verb *battre*, which requires an accompanying reflexive pronoun, on the corresponding English verb *fight*. (For additional discussion of subcategorization frames, see, e.g., Hunston and Francis 1999.) The empirical evidence to date shows subcategorization transfer in the production of adult L2 users occurring in only one direction: L1 > L2 (however, see Schmitt 2000, for a discussion of L2 > L1 subcategorization transfer in the Russian speech of Russian–English bilingual children). Thus, we hypothesize that we will find instances of subcategorization transfer only in our English data.

Concerning the use of articles, it is relevant to point out that English has an article system whereas Russian does not. In this type of situation, one might predict that L1 Russian influence will result in the omission of articles in participants' use of L2 English. Past studies have indeed shown that, although article omissions can be found in the L2 production of learners from nearly any L1 background, they are especially characteristic of speakers of languages such as Russian that do not possess articles (e.g. Jarvis in press; Master 1997). Omissions have likewise been found to persist indefinitely in the L2 production of many learners from article-less L1 backgrounds (Master 1987, 1997; Thomas 1989; Young 1995), and we expect this to be the case with several of our participants as well. Thus, we hypothesize that our participants will exhibit a Russian-influenced tendency to omit articles in their use of English, but we have no reason to anticipate that their use of Russian will be influenced by the English article system.

Our final category of analysis is *word order transfer*, which refers to reliance on the word order rules of one language while using another language. Odlin (1990) provides an in-depth discussion of studies of L1 influence on L2 word order. Word order transfer has also been documented in studies of L2 influence on L1 conducted with German immigrants in Australia (Waas 1996) and with Americans and Finns living in Sweden (Boyd and Andersson 1991). The latter study demonstrated that, under the influence of Swedish, the placement of adverbials in English became more variable in the speech of American learners of Swedish. In the present study, we hypothesize that speakers of Russian, a language with relatively free word order, may transfer some of the word order patterns (especially adverbial placement) of their L1 into their use of English. We are not aware of any previous research which suggests that adults with 3–6 years of exposure to an L2 may experience L2 influence in this area (Pavlenko 2000). This influence would also be

particularly difficult to verify in the present situation given that English word order possibilities are essentially a subset of those in Russian.

To summarize, our hypotheses concerning the directionality of transfer relative to each of our categories of analysis are thus as follows:

1. Framing transfer: L1 > L2
2. Semantic extension: bidirectional
3. Lexical borrowing: bidirectional
4. Tense/aspect: L1 > L2
5. Case marking: L1 > L2
6. Loan translation: bidirectional
7. Subcategorization transfer: L1 > L2
8. Article use transfer: L1 > L2
9. Word order transfer: L1 > L2

RESULTS AND DISCUSSION

Categories of transfer

The results of our analysis are presented in Table 2. The data suggest that the narratives told in English, the participants' L2, exhibit L1 influence, and the narratives told in Russian, their L1, are in turn subject to L2 influence. An intriguing consequence of this latter result is that their use of the L1 does not sound fully 'native-like' to monolingual speakers of Russian who were asked to listen to the tape-recorded narratives.

As can be seen in Table 2, consistent with our hypotheses, we found evidence of L1 > L2 transfer in framing, semantic extension, loan translation,

Table 2: Occurrence of bidirectional transfer in the bilinguals' narratives

Categories	L1 > L2		L2 > L1		Total instances
	Instances	Participants	Instances	Participants	
<i>Paradigmatic categories</i>					
1. Framing	6	4	9	5	15
2. Semantic extension	13	9	15	10	28
3. Lexical borrowing	0	0	4	3	4
4. Case marking	0	0	1	1	1
<i>Syntagmatic categories</i>					
5. Loan translation	11	7	3	3	14
6. Subcategorization	3	2	2	2	5
7. Article use	13	9	0	0	13
8. Word order	10	5	0	0	10
Total instances:	56		34		90

subcategorization, article use, and word order. We also found, as expected, evidence of L2 > L1 transfer in semantic extension, lexical borrowing, and loan translation. Contrary to our hypotheses, we found no evidence of L1 > L2 transfer in tense and aspect, lexical borrowing, or case marking, and did find evidence of L2 > L1 transfer in framing, case marking, and subcategorization, which we did not expect. Thus, our findings are as follows:

Paradigmatic categories:

- | | |
|------------------------|---------------|
| 1. Framing transfer: | bidirectional |
| 2. Semantic extension: | bidirectional |
| 3. Lexical borrowing: | L2 > L1 |
| 4. Tense/aspect: | none |
| 5. Case marking: | L2 > L1 |

Syntagmatic categories:

- | | |
|--------------------------------|---------------|
| 6. Loan translation: | bidirectional |
| 7. Subcategorization transfer: | bidirectional |
| 8. Article use transfer: | L1 > L2 |
| 9. Word order transfer: | L1 > L2 |

In what follows, we will discuss our findings in relation to each category of transfer in the order in which they are numbered above.

All six instances of L1-based framing transfer involved references to emotions. One example is *'She had some personal emotions'*, which makes use of a VERB + NOUN instead of a COPULA + ADJECTIVE construction (e.g. 'She was upset') which would be more characteristic of monolingual English. The remaining five examples similarly involved the use of VERB + NOUN constructions, as if the participants were referring to emotions as processes instead of as states, which is common in standard Russian (Pavlenko 2002). The nine instances of L2-based framing transfer similarly involved emotion references. An example of such transfer is the use of the Russian verb *vygliadet'* ('to look', meaning appearance) by two participants who were evidently attempting to produce the VERB + ADJECTIVE construction, which is common in English (e.g. 'looked angry'). However, since this type of construction is not commonly used in Russian—particularly not with the verb *vygliadet'*, which subcategorizes for a narrow range of adverbs—the participants had to insert additional wording and produce a VERB + CLAUSE construction, which is also much more characteristic of English (e.g. 'she looked as if she were angry') than of Russian with respect to this particular verb. One participant stated that the woman in the film *'vygliadela kak-budto ona byla zla na kogo-to'* ('looked as if she were angry at someone'), and, later on, *'ona vygliadela kak budto by ei bylo ochen' ne grustno, no . . .'* ('she looked as if she were very, not sad, but . . .'). Another participant suggested that the woman *'vygliadit kak budto ona kogo-to ozhidaet'* ('looks as if she were waiting for someone').

The instances of L1 > L2 semantic extension included five nouns (e.g.

neighbor for 'roommate'), four adjectives (e.g. *empty* for 'vacant' in the phrase *empty bench*), two verbs (e.g. *turned around* for 'turned away'), and two prepositions (e.g. *among* for 'in' in the phrase *letter among the mail*). Each of these cases involved the use of L2 English words on the model of L1 Russian translation equivalents that have broader semantic ranges (as in the case of *neighbor* ('sosed'), which in Russian refers both to next-door neighbours and apartment mates). The fifteen instances of L2 > L1 semantic extension in our data involved eight verbs (e.g. *vybrat'* ('to choose, to pick out) for 'to take out' in the phrase '*pis'ma kotorye one vybrala iz pochtovogo iashchika*' 'letters which she took out of the mail box), three nouns (e.g. *sozhitel'nitsa* 'mistress' for 'roommate'), three adverbs (e.g. *neudobno* '[physically] uncomfortable' for 'uncomfortable'), and one adjective (*neschastlivaia* 'unhappy, unlucky' in the meaning of 'upset'). Some of these extensions entailed the use of L1 Russian words with the broader semantic ranges of their L2 English equivalents (as in the case of *neudobno* ('uncomfortable'), which in Russian refers to either physical discomfort or embarrassment, but in English can also refer to psychological or emotional discomfort). Other cases involved the attribution of an alternative meaning to an L1 Russian word through a re-analysis which considered only the literal meaning of its component parts but not its connotation (as in *sozhitel'nitsa* 'mistress', literally 'co-habitant,' which was used to refer to a roommate).³

The third area of language use where we identified crosslinguistic influence was L2 lexical borrowing. In this category we identified four instances in which English words, adapted phonologically and morphosyntactically, were used in Russian narratives: '*landlord*', '*appointment*', and '*boyfriend*' (the last item was used by two different participants).

In our next category, case marking, we found one instance of L2 transfer in which the participant erroneously used an accusative form of the pronoun *ee* ('her') instead of the dative *ei* ('[to] her'). It is questionable whether much significance should be attributed to a single instance that may represent either transfer (stemming from the fact that English does not distinguish between the two cases) or a performance error. Based on the fact that the participant did not appeal to self-correction, we suggest that this instance may indeed be a case of transfer, and that, at the very least, L2 influence on L1 in the area of case marking deserves further consideration in the language production of Russian L2 users of English.

The eleven instances of L1-based loan translations included three word-for-word translations of Russian figurative metaphors (e.g. *deep inside herself*, stemming from the Russian '*uiti v sebia*' 'to go inside oneself'); the remaining eight were less figurative expressions whose structure and meaning in the given context were characteristically Russian (e.g. *She probably didn't know how to spend the time or where to go*). The three instances of L2-based loan translations involved two literal translations of metaphoric expressions, such as '*on vtorgaetsia v ee odinochestvo*' ('he invades her privacy', literally: solitude) and one of a collocation '*predlagaet ei kakuiu-to emotsional'nuiu pomoshch'*

('offers her some emotional help'), where an appropriate Russian expression would have been *podderzhka* ('[moral, emotional] support').

With respect to L1-based subcategorization transfer, we found that all three instances in the data involved VERB + SUBCATEGORIZED WORD CLASS transferred from Russian into English (i.e. *kissed with*, *stretched herself*, and *start cry*). We also found two instances of L2 > L1 subcategorization transfer (with eight additional instances where subcategorization transfer was subsumed by the more general category of framing transfer).⁴ One example is the utterance '*kakoi-to orkestr igral muzyku*' ('some orchestra play-3 SG/ MASC/PAST music-ACC/FEM/SG'). Although this SVO construction is perfectly acceptable in English, in Russian the verb *igrat'* ('to play'), when applied to an orchestra, can be used either intransitively ('*igral orkestr*') or as a double transitive verb in SVO constructions referring to a particular type of music (e.g. *kakoi-to orkestr igral muzyku Shostakovicha* 'some orchestra play-3 SG/PAST music-ACC/FEM/SG [by] Shostakovich GEN/MASC/SG').

Next, ten of the thirteen article errors that we identified as L1-influenced were omissions (e.g. *It could be death of a relative*, *She got piece [of paper]*), and the remaining three involved oversuppliance of the definite article to syntactic slots normally filled with possessive determiners (e.g. *She . . . takes the coat off*). Regarding the errors involving the use of the definite article where native English speakers would use a possessive determiner, we interpret these as being L1-influenced because they reflect the specific Russian-based pattern of referring to commonly denoted body parts (e.g. hand, head, shoulder) and unique possessions (e.g. car) without an accompanying possessive determiner when the referent is unambiguous. Their use of the definite article in such cases probably reflects the fact that they recognize such NPs as specific and/or known referents (cf., e.g., Master 1987; Young 1995).

Finally, of the ten L1-based word order errors we identified, seven involved adverbial placement (e.g. '*She didn't say even to her friend . . .*'), two involved the ordering of multiple attributive adjectives (e.g. '*young tall pretty woman*'), and the remaining occurrence involved subject-verb inversion ('*I don't know what was that*').

To summarize, 82 per cent of our participants (18 out of 22) produced instances of L1 influence in at least one of six categories: (1) framing, (2) semantic extension, (3) loan translation, (4) subcategorization, (5) article use, and (6) word order. There were no instances of L1 > L2 transfer found in the areas of tense and aspect, lexical borrowing, or case marking. With regard to tense and aspect, it is possible that the participants have fully acquired the English tense and aspect system and that such errors are more representative of beginning and intermediate learners (Wenzell 1989). On the other hand, it is equally possible that the relatively limited amount of production did not allow us to tap into contexts where L1 tense and aspect transfer may surface. With regard to lexical borrowing, our findings support our earlier suggestion that L1 > L2 lexical borrowing may be atypical for speakers of minority languages living in predominantly monolingual environments. Finally, we

have seen no evidence of L1 > L2 case marking transfer. As discussed earlier, this is not surprising given the differences between the English and Russian case marking systems—even if such influence existed, it may be evidenced as avoidance and be difficult to observe.

L2 influence, in turn, was found in 77 per cent of the narratives (17 out of 22 participants) in one or more of the following six categories: (1) framing, (2) semantic extension, (3) lexical borrowing, (4) case marking, (5) loan translation, and (6) subcategorization. In other words, in addition to the three categories where L2 > L1 transfer was hypothesized—semantic extension, lexical borrowing, and loan translation—we have also found unexpected evidence of L2 influence in linguistic framing, case marking, and subcategorization. While the single instance of case marking transfer may be a performance error, the eleven instances of L2 framing and subcategorization transfer suggest that L2 influence on L1 in populations that have been exposed to the L2 for 3–8 years is not limited to semantic effects but also affects grammar.

Thus, we have documented that our participants' production in both languages is subject to L1 and L2 influence. Transfer was documented to work both ways in the narratives of 14 out of 22 participants (64 per cent), with only one participant not exhibiting transfer in either language. We have also established that for Russian–English bilinguals some linguistic categories appear to be more susceptible to L1 influence (article use, word order), and others to L2 influence (lexical borrowing, case marking). Bidirectional transfer effects were encountered in: (1) framing, (2) semantic extension, (3) loan translation, and (4) subcategorization.

External factors in bidirectional transfer

To the extent that our empirical design allows us to address such questions, we next consider whether the effects we have observed may have been a consequence of the elicitation procedures and/or limited to a particular group of subjects. Previous research on language transfer has identified four external factors as critical influences on the amount and directionality of transfer (Dechert and Raupach 1989; Gass and Selinker 1992; Kellerman and Sharwood Smith 1986; Odlin 1989; Ringbom 1987). Two of them—length of exposure and age of arrival—have to do with the demographics of the group, and the other two—language mode and context effects—with the methodological procedure. Interestingly and tellingly, none turned out to be significant in our data. First of all, with the help of nonparametric Mann–Whitney tests we established that there was no significant difference in the amount or directionality of transfer between the participants who had spent 3–4 years in the USA and those who had spent 5–8 years. Both groups produced similar numbers of instances of L1 transfer and L2 transfer per participant. Second, age of arrival was not a significant factor for this sample,

as later arrivals (between the ages of 17 and 19) did not produce significantly higher amounts of L1 transfer.

The third factor that may influence the amount and directionality of transfer is language mode, conceptualized by Grosjean as 'a state of activation of the bilingual's languages and language processing mechanisms' (Grosjean 1998a: 136). A bilingual's language mode may be influenced by a number of factors, including the situation, the interlocutors, and prior verbal interactions. In the present study the participants started out in a relatively monolingual English mode, with their Russian inhibited or dormant, as they were coming into the lab after attending classes conducted in English. Half proceeded to perform in this mode and the other half were spoken to in Russian, in order to induce the Russian mode, or at least to activate Russian. However, the differences in directionality and amount of transfer between the narratives of participants who started out in English and those who started out in Russian turned out to be non-significant, suggesting that language mode does not have a substantial effect on the data.

Finally, the fourth factor that may influence the amount of transfer is context congruence, which in our study refers to whether the participants recalled the movie in the language of the environment in which the action took place. The environment was relatively easy to identify for these bicultural bilinguals despite the fact that the movies had no dialogue and only music on the soundtrack; many narratives contained references to where the narrators thought the action had taken place. Once again, however, our analysis demonstrated that cases in which the language of recall did not match the context did not differ significantly in either amount or directionality of transfer from cases where language and context matched.

In sum, our data indicate that variations in age of arrival and length of exposure did not significantly affect directionality or amount of transfer in our sample. This, in turn, suggests that L2 users who have been exposed to the L2 for 3 years or longer through intensive interaction in the target language context may start exhibiting bidirectional transfer effects in their two languages, not just L1 transfer in their use of the L2. Our data also indicate that some post-puberty L2 learners, such as B4 (AOA 19, LE 7 yrs), B6 (AOA 16, LE 6 yrs), B12 (AOA 16, LE 3 yrs) and B18 (AOA 13, LE 7 yrs), are able to produce oral narratives in L2 that are native-like both semantically and morphosyntactically, or are at least void of transfer-related errors. It is interesting to note that all four of these successful learners are female; however, the lack of more varied and extensive production data prevents us from making any further claims about the subjects' acquisition or the role of gender in the process of second language learning. Most importantly, our examination of the influence of external factors on directionality and amount of transfer in our data suggests that bidirectional transfer in the narratives of our participants does not appear to be influenced by language mode or by context congruence. This, in turn, leads us to posit that the instances of bidirectional transfer we observed are not an epiphenomenon elicited by

variations in procedure, but are an intrinsic feature of bilingual performance which deserves close further examination.

CONCLUSION

To summarize, our empirical investigation has documented synchronic bidirectional transfer in the elicited production of adult L2 users who had been exposed to the L2 for a period of 3–8 years. We interpret these results as supporting claims by Cook (1991, 1992, 1999), Grosjean (1992, 1998a) and others concerning the dynamic and flexible nature of multicompetence. In particular, the evidence of bidirectional transfer underscores the unstable nature of ‘native-speakerness’. The instances of L2 linguistic (as opposed to purely semantic) transfer in the L1 data—though limited—suggest that the restructuring of language-related competence may extend beyond semantic representations to areas of formal linguistic competence that have traditionally been believed to be part of an adult speaker’s steady-state grammar, or stable implicit linguistic competence (cf., e.g., Chomsky 1981; Lardiere 1998; Schnitzer 1993).

While length of exposure and age of arrival did not influence the amount or directionality of transfer in the production of our participants, we have no doubt that future studies looking at more diverse groups of subjects and different combinations of languages will provide more enlightenment concerning the ways in which these and other variables may affect the occurrence of transfer. Similarly, while the present study uses a synchronic design, future work on crosslinguistic influence will benefit from examining bidirectional transfer through diachronic longitudinal case studies involving a variety of elicitation procedures. Such studies could also pay close attention to the ways in which the syntagmatic and paradigmatic dimensions of language transfer may be differentially affected in different combinations of L1s and L2s (as well as L3s, etc.). It is quite possible that we will find a high variability of transfer effects, ranging from mere L1 transfer to bidirectional transfer, to transfer between more than two languages, to attrition of one or more of the languages involved under the influence of another language.

(Revised version received August 2001)

NOTES

- 1 We also acknowledge that in actual processing, the speaker might make the choice in light of lexical accessibility rather than by deciding on a preferred linguistic frame.
- 2 When describing lexical borrowing, some scholars distinguish between single-word code-switching and items adapted phonologically and morphologically to the host language (Boyd 1993); others (Grosjean 1998b) suggest that both code-switching and lexical borrowing are part of code-mixing and not interference. In the present study, we attempted to put the subjects in the monolingual mode and thus avoid instances of code-mixing and code-switching. As a result, code-switching was attempted by one subject only, and even that subject translated both code-switches.

Consequently, in our own analysis we will consider phonologically and morphosyntactically adapted items to be instances of transfer in the form of lexical borrowing, even though we realize that some may disagree with this interpretation.

- 3 We do not consider this example to be a case of loan translation, because the word 'sozhitel'nitsa' (literally, co-habitant) is not a direct translation of the English 'roommate' (*sosedl-ka po komnate*).
- 4 The distinction between framing transfer and subcategorization transfer is mainly one of perspective. In the present study, framing transfer refers to crosslinguistic

influence in the choice of the grammatical class of the head word of a phrase—which ultimately determines the structure of the phrase itself—whereas subcategorization transfer refers to crosslinguistic influence in the choice of one or more of the lexical complements, arguments, or collocational counterparts of the head word. Unlike framing, subcategorization thus involves not only selection but also co-occurrence constraints, and such constraints can be either grammatical or semantic (or both), as the example in this paragraph demonstrates.

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