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Why transfer is a key aspect of language use and processing in bilinguals and L2-users

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Bilinguals and L2-learners are different from monolinguals not only because they know more than one language or can switch between languages, but also because they constantly need to juggle their languages: it has been proposed by some that both languages are active and available even when only one of them is being used (Bialystok, 2008; Dijkstra, Grainger, & Van Heuven, 1999; Kroll, Bobb, & Wodniecka, 2006). In situations where only one language can be used, bilinguals have to select words from the language which is needed for that particular interaction, while inhibiting (or deactivating) words from the other language. According to Bialystok (2008, p. 4), the need to control attention to the target language in a context in which the other language remains active is the single feature that makes bilinguals unique. This process of attentional control is, however, not water-tight. Bilinguals sometimes need to activate one language for a few minutes or even seconds and another one in the next few moments. The linguistic consequences of this incessant juggling act are that bilinguals and L2-learners cannot keep their languages completely separate at all times, and features of the deactivated language regularly appear in the language the speaker intended to use. In the literature, these features are often referred to as interference, transfer or cross-linguistic influence, and their existence is well documented. In the past these phenomena have often been seen in a negative light as deviations from monolingual norms, to be avoided whenever possible (see Jarvis & Pavlenko, 2008, for an overview of such views).

Even today, according to Ortega (2010), monolingual biases continue to be built into research, e.g. in the field of second language acquisition, and she therefore calls for a 'bilingual turn' in SLA. If we want to understand bilinguals and L2-learners as unique speaker-hearers (Grosjean, 1985), we need to abandon the monolingual view of bilinguals and L2-learners, and stop considering bilinguals or L2-learners as failed monolinguals who have only partial knowledge of two separate language systems. Under a holistic view of bilingualism, first proposed by Grosjean, monolinguals are no longer seen as the norm, and the separation of two language systems is not considered the ideal state of affairs for bilinguals. Instead, the psychological and linguistic consequences of the coexistence of knowledge of the L1 and the L2 in the bilingual's mind – which Cook (2008) refers

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to as multicompetence – become the focus of research which aims at discovering what it means to be bilingual. In this approach, studying transfer should be a first priority, because it provides the key evidence that bilinguals process language differently: the existence of transfer can provide crucial insight into the activation of languages and into the functioning of attention control in the bilingual mind. In some cases, contact between the languages in the bilingual can lead to the emergence of unique, hybrid features that exist in neither of the two source languages (see also Ng and De Leeuw, Mennen, & Scobbie, this issue).

In the field of SLA, the role of transfer is still controversial, even though all researchers assume transfer to play a role in L2 acquisition. As is well known, Lado (1957, p. 11) strongly believes the role of the L1 to be crucial. The author points out that the fundamental assumption behind his work is that:

> . . . individuals tend to transfer the forms and meanings, and the distribution of forms and meanings of their native language and culture to the foreign language and culture – both productively when attempting to speak the language and to act in the culture, and receptively when attempting to grasp and understand the language and the culture as practiced by natives.

Many assumptions behind Lado's theory, which laid the foundations for the Contrastive Analysis Hypothesis, are no longer valid, however. Most notably, Lado's assumption that learners will find those elements that are similar to their native languages to be simple, and those elements that are different to be difficult (p. 2) can no longer be upheld (see also Kramsch, 2007, for a critical reappraisal of his work, and Ringbom, 2007, for a detailed analysis of the role of similarity in L2 learning). Despite these obvious shortcomings, we believe it is important to do justice to Lado's work in this special issue of *IJB* because he drew attention to the pervasive role of transfer, and this has paved the way for later L2 theories which see transfer as crucial, for example Schwartz and Sprouse's (1996) Full Transfer/Full Access Model, even though these authors would not agree with the behaviourist assumptions of Lado's model.

Research from a range of fields has shown that the languages of bilinguals and L2-learners are connected in so many ways rather than separate, and therefore current models of language processing see transfer as a key mechanism in L2-learning. In his Unified Competition Model, MacWhinney (2008, p. 342) proposes that the mechanisms of L1-learning are to be seen as a subset of the mechanisms of L2-learning. MacWhinney claims that whatever can transfer will transfer, although not all subsystems of a language transfer equally easily. His model explains why transfer is pervasive at many levels: phonetics/phonology, lexicon, conceptualization and pragmatics, and attested in production as well as comprehension. Not all kinds of transfer have been explored in much detail yet: transfer at the phonetic/phonological level has only recently begun to be explored in more depth, due to the development of readily available tools for the analysis of spoken language, such as PRAAT (http://www.fon.hum.uva.nl/praat/). Transfer at the conceptual level is also a new field of study, which builds on new insights from the relatively new field of cognitive linguistics.

The role of transfer remains controversial, however. In Pienemann's (1998, 2005) Processability Theory, for example, the assumption is that transfer is developmentally moderated. In his view, the research evidence does not support a full transfer of the L1 in the initial stages, because he assumes that L2 structures can only be transferred when the processor is able to deal with these. Lefebvre, White, and Jourdan (2006), on the other hand, assume that L1 transfer is important in the early stages of L2 acquisition and remains influential in later stages if there is not enough positive evidence for the learners to progress in their development.

Several researchers (Cook, 2003; Grosjean & Py, 1991) have drawn attention to the fact that transfer happens not only from L1 to L2 (forward transfer), but also from L2 to L1 (reverse transfer). The latter is probably similar to L1 attrition, but it is not entirely clear at this point how reverse

transfer and L1 attrition can be differentiated (see also Jarvis & Pavlenko, 2008). Furthermore, Cenoz, Hufeisen, and Jessner (2001) show how transfer can take place between the three languages of a multilingual: from L1 to L3 and vice versa, and between L2 and L3. Evidence from multilinguals is crucial for a further development of theories on cross-linguistic influence, as issues of directionality and causality become extremely complex in situations where more than two languages are involved (see also Ng, this issue). Research among multilinguals can also lead to a further understanding of the similarities and differences between convergence and transfer.

Transfer has been studied by researchers from a wide range of fields: language contact and Creole linguistics, bilingual first language acquisition, L2 and L3 acquisition, language attrition and psycholinguistics. Unfortunately the different fields do not agree on the terminology to be used for the phenomena under study. Of course, it is possible that the underlying mechanisms which lead to particular surface phenomena are different, which is why some researchers prefer to use their own terminology (see also Treffers-Daller, 2009, for a discussion of the similarities and differences between transfer, code-switching and convergence). The lack of agreement on the nature of the phenomena and the labels for these, nevertheless, makes it very difficult to ensure that research findings from one field are perceived in another field. Researchers working on contact-induced language change talk about substratum influence or shift-induced interference (Thomason & Kaufman, 1988), imposition (Van Coetsem, 1988), replication (Heine & Kuteva, 2005), pattern replication (Matras & Sakel, 2007) or transference (Clyne, 2003). Among psycholinguists the term interference continues to be used, although this is no longer common among scholars in the field of SLA, who think this term has too many negative connotations. In SLA and BFLA the terms cross-linguistic influence and transfer are perhaps the most common.

With Jarvis and Pavlenko (2008), we assume that transfer and cross-linguistic influence can be seen as theory-neutral terms to refer to the influence of one language on another, across a range of disciplinary areas. In the conclusion of their book, Jarvis and Pavlenko call for more interaction and dialogue between researchers working in the areas of language contact, bilingualism, SLA and language attrition. This special issue of *IJB* aims to meet this challenge in bringing together researchers from different research fields who study transfer and cross-linguistic influence in morphosyntax, prosody and the conceptualization of motion in data from a wide range of settings and languages spoken by bilinguals, multilinguals, L2-learners or L1-attriters.

The first six articles in this special issue deal with transfer in situations of bilingualism, and the last three with L2-learners or L2-users. The issue starts with an invited contribution by Grosjean, one of the most influential researchers in the field of bilingualism in general and speech processing in bilinguals in particular. A very important aspect of his work has been to raise awareness of the fact that bilinguals are speaker-hearers in their own right, different from monolinguals (see also above), and this message has reached wide audiences far beyond academia through his books *Life with two languages* (1982) and *Bilingual* (2010). Grosjean has also greatly contributed to our understanding of transfer, and his current contribution to this special issue provides a further elaboration of the distinction between static and dynamic transfer he proposed in earlier work (Grosjean, 2001). In his article, Grosjean suggests using the term 'transfer' for the static phenomena which reflect permanent traces of one language on the other in the bilingual. The term 'interference' could then be used for the dynamic phenomena that are elements of the other language which slip into the output of the language being spoken (or written). One way of distinguishing between both types that Grosjean discusses in this article is to investigate the acceptability of particular phenomena among bilinguals: a feature that is given a high presence or acceptability value is regarded as a transfer, but when a feature is given a low presence or acceptability value it is considered as an interference. Grosjean also summarizes the findings of studies done by two of his students, Guillelmon (1991) and Favre (1995) at Neuchâtel University, who investigated the

comprehensibility of French sentences containing interference (the term used by these two authors) from Swiss German. The results show that bilinguals generally understand such sentences better than monolinguals. As studies of receptive transfer/interference are still rare, Guillelmon's and Favre's contributions are important first steps towards a better understanding of this phenomenon. Grosjean also raises the issue of the locus of transfer: we would like to find out at what point in the production process – as specified in Levelt's (1989) speech production model – transfer occurs. Both these issues are important for researchers in the field to concentrate on in future.

In his article, Muysken reviews language contact in different Andean territories, from Colombia and Ecuador to Argentina, building on his extensive fieldwork and in-depth knowledge of the many Amerindian languages he has studied for over 30 years. Muysken focuses in particular on the emergence of two mixed languages and a mixed register with a Quechua structure: Media Lengua (Ecuador) and Kallawaya (Bolivia), both relexified varieties within the Quechua language family, as well as bilingual mixed songs in Peru, *waynos*. The outcome of language contact in the different languages differs depending on the sociolinguistic environment in which they are used: Media Lengua is an informal community language, while Kallawaya is a ritual healing language only used by male adults. *Waynos* are a very popular musical genre in large parts of the southern Andes in Peru. For each of the three varieties, Muysken explains to what extent the contact phenomena are best seen as transfer, relexification, borrowing or matter or pattern replication, making reference to a wide range of other contact situations to clarify the special cases under study here. Muysken's article also makes a very important contribution to the exploration of the psycholinguistic processing issues, in terms of the type of transfer that they exemplify, that can help account for the phenomena found. He shows that because of the grammatical and morphophonological properties of Quechua, roots are much more frequently involved in transfer than affixes, which provides important psycholinguistic information about the processing of lexical material versus affixes.

Turning to the Amazonian language Pirahã, Sakel's article on 'Transfer and language contact: The case of Pirahã' presents a contact situation that can be analysed from a variety of perspectives. She focuses on the expression of quantities in the most heavily influenced variety, the language used by 'gatekeepers', middle-aged men whose role it is to communicate with outsiders. This variety can be viewed from two main perspectives: (1) L2 Portuguese with heavy influence from a Pirahã substrate, which would be analysed in the theoretical framework of transfer or (2) an underlying Pirahã structure into which a large amount of Portuguese lexicon has been integrated, which could be analysed as borrowing. Sakel discusses that this contact situation is actually not satisfactorily and fully analysed as either, and that one would benefit from combining the two approaches.

The next article focuses on transfer in French as spoken by Dutch–French bilinguals in Brussels. Treffers-Daller analyses grammatical collocations such as *chercher après* 'to search for' and verb-particle constructions (VPCs) such as *recevoir dehors* 'to get out' in Brussels French. The occurrence of such patterns in Romance varieties is often linked to contact with Germanic varieties, in which VPCs are common, but proof for this hypothesis was never provided. In the current article Treffers-Daller discusses the syntactic and semantic properties of both types of constructions and argues they are to be considered as replications of grammatical use patterns (Heine & Kuteva, 2005) from the contact language, the regional variety of Dutch. The approach followed by Treffers-Daller is based on methods proposed by Jarvis (2000) and Mougeon, Nadasdi, and Rehner (2005) for the investigation of transfer. Proof for transfer from Dutch is found through a detailed comparison of the frequency of the patterns in a range of spoken and written corpora from 20th-century French as well as from historical sources. Although almost all constructions under study are attested in some historical sources, they are clearly much more frequent in Brussels French than in any other variety of French that has not been influenced by a Germanic language. Thus, Treffers-Daller

argues, the phenomena should be seen as examples of covert transfer (Mougeon et al., 2005): there is a marked increase in the frequency of a feature under the influence of the contact language, where the feature is very frequent. In addition, she shows that Grosjean's distinction between transfer and interference is helpful in the analysis of the data: most of the phenomena found are best considered as transfer in the definition offered by Grosjean (this issue) in that they are static and reflect permanent traces of Dutch on French. In one case, however, evidence for dynamic transfer (interference in Grosjean's terminology) during an online story telling task was found.

With the next two articles we move from transfer at the morphosyntactic and lexical levels towards transfer in prosody. In the first of these two articles, Ng investigates the origin of the word-final high in the speech of multilingual speakers of Colloquial Singaporean English (CSE) and shows that this variety of Chinese English is unique in that high tone is not attracted to stress, but to word-final position, e.g. *hi*ˈ*biscus* [LˈMH]. Combining original Bazaar Malay phonetic data with a review of literature on other relevant varieties such as Baba Malay and Indian English, Ng proposes that CSE represents the first documented case of L2–L3 prosodic transfer and concludes that the ultimate source of CSE's word-final high boundary tone is probably indigenous Malay phrase-final high tone via transfer and levelling from Bazaar Malay, reinforced by Baba Malay and Indian English. It is particularly remarkable that the phenomenon constitutes a case of transfer from a non-natively spoken language. In her analysis, she builds on findings from SLA, third language acquisition and Creole studies, and adapts Jarvis's (2000) criteria for proof of SLA transfer to Singapore's multilingual context.

De Leeuw, Mennen, and Scobbie also focus on changes in prosody, but this time the subjects are a group of German native speakers who had moved to Anglophone Canada in late adolescence to adulthood, and who are experiencing language attrition in their L1. First language attrition refers to the changes which a first language (L1) undergoes when a second language (L2) is acquired in a context in which L1 use is reduced. As Jarvis and Pavlenko (2008) point out, we know very little about the relationship between reverse transfer and L1 attrition, and therefore this article is particularly welcome. The phonetic variable chosen for this analysis is that of prenuclear tonal alignment, which is defined as the temporal coordination of fundamental frequency (F0) with phonetic segments (Atterer & Ladd, 2004, p. 177). As the latter found that the alignment of the prenuclear rise occurs earlier in (British) English than it does in German, this is an interesting variable to investigate in the context of language attrition. De Leeuw et al. test the hypothesis that tonal alignment of both tonal elements of the prenuclear rise would occur significantly earlier in the native German speech of the bilingual migrants than in the German speech of a monolingual control group. The results indicate L1 changes in the intonational alignment of the prenuclear rise, although the start of the prenuclear rise appears to undergo more L1 attrition than the end. The authors also found a considerable amount of interpersonal variation in the data: some clearly experience attrition, while others do not, and some informants tend to 'overshoot' the German norm. This leads the authors to conclude that L1 attrition may result in phenomena within the L1 which resemble *neither* the L1 nor the L2: thus, the authors claim, L1 attrition may describe processes beyond the two-dimensional framework offered by the terms transfer and interference.

In the last three articles, this special issue concentrates on different aspects of transfer among L2-learners or L2-users. In the first of these three contributions, Rankin analyses the transfer of verb-second syntax (V2) from L1 German and Dutch into L2 English, in the framework of the Interface Hypothesis (Sorace & Filiaci, 2006). According to this framework the interfaces between narrow syntax and other modules of the grammar are vulnerable to transfer effects, while narrow syntax itself, i.e. elements internal to the syntactic computation, is resilient to transfer or attrition. A comparative analysis of learner corpora of L1 German, Dutch and French, and native English

writing reveals that the German and Dutch speakers produce distinct patterns of inversion in declarative clauses, indicating the transfer of V2. They produce non-target subject-auxiliary inversion and copula inversion in topicalization contexts where a non-subject XP is fronted. This indicates they have not fully acquired the pragmatic constraints on residual V2 in English. However, little evidence for transfer was found in narrow syntactic contexts such as subject-initial clauses, where evidence for V2 would be thematic verb movement over sentential negation, or interrogatives, where transfer in narrow syntax would involve movement of thematic verbs to second position. On the basis of these results, Rankin concludes that the transfer of V2 is due to representational deficits, i.e. it is the result of 'transfer' rather than 'interference' in Grosjean's terms. The evidence is interpreted to support the Interface Hypothesis because the data show that it is not V2 syntax but discourse-pragmatic patterns that transfer.

Larrañaga, Treffers-Daller, Gil Ortega, and Tidball test Lefebvre et al.'s (2006) claim that L1 transfer from English is not only important in the early stages of L2 acquisition, but remains influential in later stages if there is not enough positive evidence for the learners to progress in their development. The findings are based on analyses of path and manner of movement in stories told by British students of Spanish of three different proficiency levels. Contrary to the findings of Cadierno (2004) and Cadierno and Lund (2004), the encoding of manner seems to pose enormous difficulties, in particular in contexts where the figure crosses a boundary. This is also the case for students who had been abroad on a placement in a Spanish-speaking country prior to the data collection. An analysis of the frequency of manner verbs in Spanish corpora shows that one of the key reasons why students struggle with manner is that manner verbs are so infrequent in Spanish. The authors claim that scarce positive evidence in the language exposed to, combined with the lack of negative evidence are responsible for the long-lasting effect of transfer on the expression of manner. The existence of Latinate verbs such as *enter* or *descend*, which appear to facilitate the acquisition of Spanish, may actually function as a double-edged sword. As Ringbom (2007) has shown, learners look for similarities between languages wherever they can find them, and this ties in well with White's (1991) claim that transfer is triggered by partial overlap between languages. Larrañaga et al. assume therefore that Latinate path verbs in English may lead students wrongly to believe the expressions of motion in their two languages are similar. As Latinate path verbs do not exist in Danish (Cadierno & Lund, 2004), this can also in explain at least in part why Danish learners of Spanish experience less transfer in the acquisition of L2 Spanish.

In the final article, Ehala presents the results of a quantitative study of Estonian object marking by L2 speakers with Russian as their L1. A written production task was used to obtain the data. This task consisted of an Estonian text in which the informants needed to fill the blanks left for the direct objects. The data revealed large-scale variability: informants did not only transfer Russian features to Estonian L2. There was also evidence for analogical extension of productive patterns of Estonian object case assignment and compromise forms. This indicates that direct transfer of L1 patterns is just one and not the major source of L2 innovations. In the article Ehala argues that all these phenomena rely on analogy in the broadest sense, and therefore he assumes that analogy is the main mechanism behind contact-induced phenomena in L2 usage and that copying, replication and pivot-matching are all specific manifestations of the same analogical mechanism (see also Treffers-Daller, 2009).

In this issue a number of avenues for future research were highlighted. A first point we would like to mention here is transfer between the languages of multilinguals, as this stretches the boundaries of conceptual frameworks that have been used so far, and may help clarify the similarities and differences between transfer and convergence. A second important issue is whether reverse transfer and L1 attrition need to be distinguished conceptually and empirically, and if so, how this can be

done. Third, there is the question to what extent (perceived) similarities between languages further transfer. This is interesting because it may give us more insight into constraints on transferability: which conditions make transfer more or less likely (Jarvis & Pavlenko, 2008, p. 234). Fourth, it is important to study transfer among non-western languages, as it is not possible to establish constraints on transferability on the basis of a small sample of Indo-European languages only. This is even more true in the case of sign language – oral language transfer which is a domain which needs a lot more research. Fifth, the similarities and differences between analogical change and transfer are worth exploring in future, because a further analysis of these can help us understand to what extent internal and external language change are fundamentally different. Finally, we know little about the ways in which listeners perceive transfer, as this has hardly been studied.

We hope that the current issue has contributed towards answering some of the important questions in the field and will help bring about further dialogue between researchers from SLA, bilingualism and language contact, as all these fields are interested in the ways in which different languages influence each other in production and reception. Research which builds on findings from all these disciplines has the best chance to contribute to our understanding of what multicompetence (Cook, 2008) in bilinguals, multilinguals and L2-learners means.

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