

An attempt to isolate, and then differentiate, transfer and interference

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Abstract

Transfer/interference has a long history in bilingualism research with moments of clear interest and moments of disregard. We are currently entering a period of renewed interest. In the first part of this article, it is argued that the only way to isolate transfer/interference from other contact phenomena such as code-switching and borrowing is to put bilingual speakers in a strictly monolingual language mode. In the second part, an attempt is made to differentiate between static and dynamic transfer/interference. It is suggested that we use the term 'transfer' for static phenomena which reflect permanent traces of one language (La) on the other (Lb), and that we use the term 'interference' for dynamic phenomena which are elements of the other language(s) which slip into the output of the language being spoken or written. According to this view, interferences are linked to processing. A way of differentiating empirically between transfer and interference is described. It is a byproduct of a study conducted at the University of Neuchâtel which was aimed at getting a better understanding of restructuring in an L1, based on the long-term influence of an L2. In the third part of the article, two other studies are described which examined the comprehension of speech containing transfers/interferences.

Keywords

contact phenomena, interference, language mode, psycholinguistics, transfer

Transfer/interference has a long history in bilingualism research with moments of clear interest and moments of disregard. We are currently entering a period of renewed interest and hopefully we now have the right tools in linguistics and psycholinguistics to make some headway in understanding the phenomenon. In this article, I first argue that the only way to isolate transfer/interference from other contact phenomena such as code-switching and borrowing is to put bilingual speakers in a strictly monolingual language mode when they are either speaking or writing. This is far more difficult than one imagines as bilinguals in controlled studies invariably activate their two, or more, languages whereas they do not always do so in normal interactions. In the second part of the article,

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I attempt to differentiate between static and dynamic transfer/interference. I suggest that we use the term ‘transfer’ for static phenomena and the term ‘interference’ for dynamic phenomena. Thus, interferences are linked to processing and have to be accounted for by encoding mechanisms. A study conducted at the University of Neuchâtel that revealed a way of differentiating empirically between transfer and interference is described. In the final part, two other studies are reviewed which examined the comprehension of speech containing transfers/interferences.

I. Isolating transfer/interference from other contact phenomena

As is now well recognized, earlier definitions of transfer/interference were much too broad. Weinreich (1968) 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’; Haugen (1956) referred to it as ‘the overlapping of two languages’; Mackey (1968) defined it as ‘the use of features belonging to one language while speaking or writing another’; Clyne (1972) called transference ‘the adoption of any elements or features from the other language’; and Baetens Beardsmore (1982) defined interference as ‘the observable features of one code used within the context of the other’. As we read these classic writers with what we know about contact phenomena today, we realize that these broad definitions often include code-switching and borrowing as well as transfer/interference, the latter being either ephemeral (dynamic) or permanent (static).¹

In Grosjean (1998), I wrote that we will never get to the bottom of this terminological problem if we do not take into account, and do not control for, the language mode bilinguals and language learners are in when they are being studied (i.e. observed, recorded, tested, etc.). Bilinguals in their everyday lives find themselves in various language modes that correspond to points on a monolingual–bilingual mode continuum (see Grosjean, 2008, for a thorough discussion of this). At one end of the continuum, bilinguals find themselves in a bilingual language mode in that they are communicating with (or listening to) bilinguals who share their two (or more) languages and with whom code-switching and borrowing may take place. At the other end of the continuum, bilinguals are in a monolingual language mode in that they are interacting only with (or listening only to) monolinguals of one – or the other – of the languages they know. One language is active and the other is deactivated (totally or almost totally) so as to reduce as much as possible, if not eliminate completely, all traces of code-switching and borrowing. In this mode, bilinguals are behaving, as best they can, monolingually. These are end points but intermediary points exist and depend on such factors as interlocutor, situation, content of discourse and function of the interaction.

The concept of language mode, which I have defined as the state of activation of the bilingual’s languages and language processing mechanisms at a given point in time, was first alluded to by well-known researchers in bilingualism. Thus, Weinreich (1968) states that when speaking to a monolingual, the bilingual is subject to interlocutory constraint which requires that he or she limit interferences (this was his cover term for contact phenomena). He added that when speaking to another bilingual, there is hardly any limit to interferences; forms can be transferred freely from one language to the other and often used in an unadapted way. Hasselmo (1970) refers to the bilingual’s different ‘modes of speaking’, and Clyne (1972) talks of various communication possibilities in the bilingual. As for Baetens Beardsmore (1982), he writes that bilinguals in communication with other bilinguals may feel free to use both of their language repertoires. However, the same bilingual speakers may well attempt to maximize alignment on monoglot norms by consciously reducing any formal ‘interference’ features to a minimum.

What seems to be clear is that all forms of contact phenomena may occur in a bilingual mode. Bilinguals can code-switch, i.e. shift completely to the other language for a word, a phrase or a sentence; they can borrow the form and meaning of a word from the other language (loanword) or just the meaning (loan shift); in the latter category, they can extend the meaning of an existing word or bring in what Haugen calls ‘creations’ (also called calques or loan translations), etc. Bilinguals can also produce transfers/interferences, which I have divided into ‘static’ elements (they reflect the permanent, or relatively permanent, traces of one language on the other) and ‘dynamic’ elements (ephemeral intrusions of the other language). However, when bilinguals are in a monolingual mode, either speaking or writing, code-switching and borrowing is either not used or kept to a strict minimum so as to ensure fluent communication with the monolingual interactant(s). Indeed, it makes little sense to bring in the other language overtly if the interlocutor does not know it. Thus, when language is produced in a monolingual mode, any transfer/interference that is produced can stand out more clearly. In Grosjean (1998), I use the image of a landscape emerging as the fog lifts. When transfers/interferences occur in the bilingual mode, which they also do, especially the static kind, they are very difficult to separate from other contact phenomena, especially borrowings. What might be a transfer/interference may just as well be a guest element or a structure produced by the speaker who is aware that his or her interlocutor knows the other language. Thus an item such as ‘baving’ produced in English by a French–English bilingual in a bilingual mode (based on ‘baver’, to dribble) may be a borrowing (loanword) or a transfer/interference, but it is most probably only a transfer/interference in a monolingual mode.

It is rare that researchers working on transfer/interference put bilingual participants in a strictly monolingual mode when they obtain language samples. This is unfortunate as they invariably obtain other contact phenomena such as borrowings and code-switches, some of which are difficult to differentiate from transfers/interferences. The guest editors wrote in their initial description of this special issue that, ‘a key reason why transfer happens is that the two languages of a bilingual are always active’. This may be true in most bilingual research situations but probably not in ‘real life’ where speakers are often in a monolingual language mode having deactivated their other language(s) totally (or almost totally). In such situations, very few, if any, code-switches or borrowings appear, whereas transfers/interferences still do. This is precisely the reason for manipulating language mode when studying the latter phenomena.

Admittedly, putting bilingual participants in a strictly monolingual mode in a research project is difficult and must be done with care. As soon as there is the slightest hint that the interlocutor (often the researcher) knows the other language, there is a fair chance that the bilingual speaker will leave the monolingual end of the language mode continuum. If that is the case, the other language will become activated, to some extent at least, and contact phenomena other than transfers/interferences will appear. Things are even more difficult when the studies are conducted in a controlled environment (e.g. a laboratory). Here is an example. Marian and Neisser (2000) interviewed Russian–English bilingual participants in order to obtain data for a study on autobiographical memories in bilinguals. Marian and Kaushanskaya (2007) then used the database to examine cross-linguistic transfer and borrowing. The first author, herself also bilingual in Russian and English, interviewed all participants individually, in English in one session and in Russian in the other. Even though the participants were instructed to only speak one language in each session, not surprisingly they failed to do so totally, hence the later study by Marian and Kaushanskaya which examined contact phenomena. The authors never clearly state that their participants were in fact in an intermediate language mode (the latter were speaking to a fellow Russian–English bilingual, after all) but the authors nevertheless wonder in the General Discussion whether the number of ‘borrowings’ (which they defined as an overt verbal behaviour consisting of the speaker ‘switching’ into the other language

and actively using single words or entire phrases from that language – in sum, code-switches in other studies) would have been less numerous if participants had been interviewed by monolingual speakers of the two languages. The authors are totally right, of course. There would have been far less contact phenomena in a totally monolingual mode and maybe no ‘borrowings’ (as defined by the authors here). Transfers would have occurred but, there too, some types may have been less numerous (for example, what they call ‘semantic transfers’ which are in fact loan shifts in more traditional terms).

In Grosjean (2008), I list a number of factors that shift the participant towards the bilingual end of the continuum. Even though I had in mind perception experiments, many factors also play a role in production studies such as the one just mentioned. These factors are a nuisance if one wants to keep things as monolingual as possible. Among them we find: a researcher who is bilingual, even though he or she only uses one language during the study or part of the study (as in the Marian papers above); a research centre that is known to work on bilingualism; the bilingual task that is asked of the participant; knowledge that the study relates to bilingualism; a bilingual university environment (e.g. in most Dutch universities, both Dutch and English are used daily, at least in reading); reports from other bilingual subjects who have just been in the study or who will do it soon; instructions that are bilingual; the presence of two languages in the study (even if it is at different times), etc. All these are ‘noise’ factors that may trigger a bilingual mode (or an intermediary mode) and hence produce contact phenomena which cannot be classified as transfers/interferences.²

In Grosjean (2001), I explain how one can try to guarantee a monolingual mode. Thus, for interview situations, if the researcher is interested in observing how a bilingual can produce just one language, the interviewer must be completely monolingual in that language and not feign to be (a frequent error often made, particularly with children and special bilinguals such as aphasic patients). In addition, the situation must be monolingual and there must not be any other person present who knows the other language. For more experimental situations, the difficulty is how to prevent the bilingual from activating, to some extent at least, the other language. If any of the factors listed above are present, they may encourage the participant to be in a bilingual mode, in part at least, and hence activate the two languages, albeit to differing degrees. One solution that I mention is to intermix bilingual participants in with monolingual participants in a monolingual study (as a course requirement, for example) and once the study is done, and only then, to go back into the list of participants and extract the bilinguals.

Unfortunately, keeping bilingual participants in a monolingual mode will be even more difficult if the study is being done in their much weaker language. In Grosjean (2008), I discuss this situation and state that the weaker language may simply not be developed enough for the participants to stay in a monolingual mode. If that is so, then they will use their stronger language in the form of guest elements (code-switches and borrowings along with transfers/interferences) to help themselves out. These may in turn create communication problems if the addressee does not know the other language or if the elements are not explained. To avoid this kind of situation, at least while one is isolating transfers/interferences from other phenomena in a monolingual mode, one may want to be careful to make sure that the bilingual participants are relatively fluent in the language being used.

2. Differentiating between transfer and interference

Over the years, I have proposed that interferences are of two kinds (see, for example, Grosjean, 1998). There are static interferences which reflect permanent traces of one language (La) on the other (Lb). These interferences are linked to the person’s competence in Lb, and can involve all

levels of linguistic knowledge. For example, at the level of phonology and prosody, a ‘foreign’ accent is well attested and is probably the clearest manifestation of a permanent trace of the other language. One can also find the permanent extension of meanings of words due to the other language, as well as specific syntactic structures that are permanently present (e.g. the constant misuse of a preposition). Many aspects of ‘interlanguage’ are due to these static interferences. The other type of interferences is what I have termed dynamic interferences, which are the ephemeral intrusions of the other language, as in the case of the accidental slip on the stress pattern of a word due to the stress rules of the other language, the one time use of a word from the other language (but pronounced in the language being spoken), the momentary use of a syntactic structure taken from the other language, etc. Dynamic interferences are linked to processing and have to be accounted for by encoding mechanisms.

Paradis (1993, pp. 134–135) proposes exactly the same dichotomy. He describes ‘competence interference’ as the systematic use of an element of La when using Lb; in that sense, the speaker’s grammar of Lb contains elements of La, that is, elements that are different from those found in native speakers’ competence. As for ‘interferences due to performance errors’, they are due to the inadvertent intrusion of an La element in the processing of Lb. Paradis writes that in such cases the speaker possesses two native-like internalized grammars (note that this does not necessarily need to be the case) but on occasion an element of La gets activated instead of an element of Lb and the speaker produces an interference error. He adds that speakers often recognize the error and repair it on the spot. Personally, having produced many such interferences myself (and having heard many produced by others), I am not so sure that speakers always ‘recognize’ such errors, as Paradis writes. Many bilinguals actually show surprise that word x, for instance, isn’t part of Lb, or that structure y comes from La since everything else produced is part of Lb.

Since these two types of interference are clearly valid and are often present at the same time in the production of bilingual speakers, I would suggest that we use the term ‘transfer’ for the static phenomena which reflect permanent traces of one language (La) on the other (Lb) in the bilingual. We could then use the term ‘interference’ for the dynamic phenomena which are elements of the other language which slip into the output of the language being spoken (or written) and hence interfere with it. If the field accepts this dichotomy, it will have to develop ways of differentiating between ‘transfers’ (static interferences) and ‘interferences’ (dynamic interferences). Unfortunately, it is usually very difficult to isolate an element in a bilingual’s output and state clearly that it is a transfer or an interference. Some things are obvious (e.g. an accent in a language) but most others are not, and hence linguists and psycholinguists need to develop various techniques to identify each one. In what follows, I would like to propose an approach that Bernard Py and I used (Grosjean & Py, 1991) along with our student, Eliane Girard (Girard, 1995). We employed it to examine the restructuring of Spanish, the first language of Spanish immigrants in Neuchâtel, Switzerland, under the influence of French, their second language, in a situation of prolonged bilingualism. I describe the work in Grosjean (2008) and review it here rapidly in order to present the approach one could use to differentiate between transfer and interference.

We tested five features, four of them syntactic, that were characterized by two variants, a Spanish variant and a Neuchâtel immigrant Spanish variant (it is this latter variant that is influenced by French). The features were the following: (1) complement of movement verbs where Neuchâtel Spanish is starting to lose the ‘a’ – ‘en’ distinction found in Spanish (e.g. *Fuimos de vacaciones en España*, based on French ‘en’); (2) object complement where Neuchâtel Spanish stabilizes the SVO order of Spanish and no longer uses the ‘a’ preposition if it concerns a person (e.g. *El león quería morder Ø el hombre*, where Ø corresponds to the missing preposition); (3) infinitive complement where Neuchâtel Spanish, under the influence of French, tends to add a ‘de’

before an infinitive that is not in an initial position (e.g. *Decidió de llamar al médico*, based on French 'd'appeler'); (4) focus which uses 'es' along with 'que', based on French 'c'est . . . que' (e.g. *Es la lluvia que lo mojó todo*); and finally, (5) loan shifts where Spanish words take on an additional meaning that comes from French (e.g. *No entiendo el ruido del tren*, where the Spanish verb 'entender', which means 'understand', has taken on a second meaning based on French 'entendre').

Our participants were first-generation immigrants with a mean age of 40. They had all been born in Spain and had arrived in Switzerland as young adults with no knowledge of French. Since then, they had become bilingual and they used their two languages on a regular basis. We asked them to give presence and acceptability judgements of sentences that contained, for each feature, either a Spanish variant or a Neuchâtel Spanish variant. They were given two booklets with sentences containing the variants. For the presence test, they had to circle a number on a scale of 1 to 7, where 1 corresponded to the variant never being used in Neuchâtel and 7 to it always being used; for the acceptability test, the scale was the same except that 1 corresponded to the variant being unacceptable and 7 to it being acceptable. In what follows, only the Neuchâtel variants are discussed as the Spanish variants were all perceived as highly present and highly acceptable. The Neuchâtel variants ranged from not being perceived as present (e.g. feature 1 received a mean rating of 2.42) to being perceived as present (e.g. feature 4 received a mean rating of 5.13). The rank ordering of variants, from least present to most present, was 1, 5, 2, 3 and 4. Note that we also found a very strong relationship between perceived presence and perceived acceptability – a variant that was present was also a variant that was accepted. We concluded that as concerns the participants' Spanish competence, there appeared to be a continuum of integration of the Neuchâtel Spanish variants, from the not so well integrated to the fairly well integrated. Note that we found very different results regarding the Neuchâtel variants with Spanish monolinguals tested in Spain – they were judged as neither present nor acceptable. A few years later, Girard (1995) tested second-generation bilinguals and obtained practically identical results to the ones we had obtained with the first-generation participants. She confirmed her results with an interpreting task to make sure that the explanation Noam Chomsky had proposed (personal communication) did not apply here. He had suggested that the high acceptability values obtained for some Neuchâtel Spanish variants could be due to a change in cognitive style; after many years in a foreign country, bilinguals might react differently to their native (first) language but their knowledge of it would not have changed. In fact, the rank ordering Girard obtained based on interpretation responses (i.e. choosing the Neuchâtel Spanish variants instead of the Spanish variants) was the same as in the acceptability study: Spanish variants were used the least for feature 1 and the most for feature 4 with features 5, 2 and 3 in between.

This brings us back to the problem of differentiating between transfer and interference. What is proposed here is that a feature that is given a high presence or acceptability value is a transfer, that is, it is a permanent trace of one language on the other. It now belongs to the linguistic competence of the people who make the judgements. On the other hand, a feature that is given a low presence or acceptability value corresponds to an interference, that is, it is a dynamic element of one language which slips into the output of the other language. Since presence and acceptability judgements give similar results, one could use either approach to decide whether one is dealing with a transfer (the value would have to be high) or an interference (the value would need to be low). Of course, some features will have intermediate values, which would mean that they may be in the process of changing from an interference to a transfer or that they are a transfer in some participants and an interference in others. According to the nature of the study, these features would be

included or put aside. For example, in parametric studies where extreme values of a factor are usually used, they would not be employed.

Not only could the approach described above be used with groups of participants but it could also be used with individual bilinguals in order to see which contact phenomena are part of the person's competence and which are characteristic of his or her performance (processing). This is important for case studies where individuals are taken singly. Other tasks may need to be developed to bring converging evidence to the results obtained. Unfortunately, differentiating between transfers (static interferences) and interferences (dynamic interferences) will be a long and difficult enterprise as the two contact phenomena clearly resemble one another. In addition, putting bilinguals in a strictly monolingual mode will be a necessary but not a sufficient condition since the two types of transfer/interference occur in that mode too. (They also appear in a bilingual mode, as I have discussed earlier in the article, along with code-switches and borrowings.) But at least, with the approach proposed here, which happened to be an accidental side-result of the study we undertook, a way has been found to differentiate between the two.

Another challenge for future research will be to explain at what point dynamic interferences (what we propose to call 'interferences') occur in the production process. The bilingual production model proposed by De Bot (1992), for example, is not clear on this. One could venture, for instance, that whole word interferences (form and meaning) involve, within the formulator, both lemmas and lexemes from L_a but phonological encoding in L_b, whereas lexical meaning interferences would only involve lemmas in L_a and lexemes and phonological encoding in L_b. Another example would be prosodic interferences which, depending on the size of the domain they cover, could involve the conceptualizer but would mainly be restricted to phonological encoding within the formulator. One other challenge will be to ascertain whether the same processing mechanisms are used for lexical borrowing within the bilingual mode and lexical interference within both the bilingual and the monolingual modes. As noted earlier, lexical borrowings and lexical interferences are clearly similar and so they may call upon some common mechanisms in the production process. Clearly, psycholinguistics models will have to be very detailed to account for such on-line bilingual contact phenomena.

3. The oral comprehension of speech containing transfers/interferences

In the final part of this article, I review two studies that examined the oral comprehension of speech containing transfers/interferences. The study of the processing of transfers/interferences – be it off-line or on-line – lags behind that of code-switches and borrowings. With this fact in mind, Delphine Guillelmon and Nathalie Favre, two students of mine in the Language Pathology Programme at Neuchâtel University, Switzerland, undertook their honours theses on the topic. Guillelmon examined the oral comprehension of transfers/interferences off-line, whereas Favre undertook an on-line study of the phenomenon. I describe each study in turn. Note that neither differentiated between transfer and interference as I have done in the preceding sections; they called their variable 'interference' and it is this term that is used in what follows.

Guillelmon (1991) was interested in whether the oral comprehension of a text is affected when it contains interferences; she also asked whether the impact is the same for monolinguals and bilinguals. Guillelmon used short French texts that described everyday scenes and that contained interferences from Swiss-German. Most of the interferences concerned single words (e.g. 'dates' instead of 'données'; 'parquet' instead of 'parterre') as well as groups of words (e.g. 'chambre à manger'

instead of 'salle à manger'; 'roman criminel' instead of 'roman policier'). There were also idiomatic expressions (e.g. 'il a du cochon' instead of 'il a de la chance'; 'il se fâche tout noir' instead of 'il se fâche tout rouge') and misuses of prepositions (e.g. 'dans le théâtre' instead of 'au théâtre'). Each text with interferences had its counterpart text without interferences; both were of the same length. A Swiss-German French bilingual person read all the texts with a Swiss-German accent. Each text was accompanied by a questionnaire containing five comprehension questions, one of which was an inference question.

Two groups of participants took part in the experiment: monolingual speakers of French who knew no German or Swiss-German (they came from neighbouring Lyon, France), and Swiss-German French bilingual speakers. The latter used their two languages on a regular basis in their everyday activities. All participants were run individually. They were asked to listen to each text so as to be able to answer questions about it at the end. While listening, they also responded to clicks that had been placed in the text (this was for another part of the experiment that I will not go into here). After each text, they answered the comprehension questions and then continued on with the next text. After a short break, all texts were presented a second time so as to be able to ascertain whether comprehension had improved between the first and the second presentations.

The pattern of results, similar for the two presentations, were as follows. Whereas monolinguals and bilinguals showed the same level of comprehension of the texts that contained no interferences, the two groups behaved very differently when the texts contained interferences. The mean comprehension score for the texts with interferences was 1.46 for the bilinguals (the maximum was 2.0) but it was only 1.04 for the monolinguals (a highly significant difference at the .001 level). It should be noted that the bilinguals obtained similar comprehension scores for the two types of texts. The overall comprehension scores increased after the second presentation but, once again, a large difference existed between the groups for the texts containing interferences: 1.92 for the bilinguals and 1.42 for the monolinguals (again significant at the .001 level).

Clearly, and not too surprisingly, texts that contained interferences gave bilinguals no problems; they were used to hearing interferences and some probably produced them also. However, monolinguals clearly did not understand these texts as well. Of course, as we will see in the next study, some interferences can be less costly for monolinguals (e.g. words used with a slightly different meaning or phrases that are slightly anomalous) but others have much more impact (e.g. when a word has no transparent counterpart in the language being heard or when an idiomatic expression simply makes no sense when calqued from the other language).

A few years later, Favre (1995) extended Guillelmon's research into the domain of on-line processing. She wanted to know if the cost was immediate (on-line) or slightly delayed (off-line, as in Guillelmon's study). She also wanted to distinguish between different types of interferences. The task Favre used is word monitoring, a well-known on-line task in which participants are given a target word to detect in a sentence; they are then given the sentence itself which contains the word. They are asked to press a key when they hear the word in the sentence and their reaction time to monitor the word is recorded. A crucial aspect of the task is that the target word is situated just after a place where a processing difficulty is expected in the experimental sentence. If the listener is slowed down by the difficulty, then this should show up in the time it takes to react to the target word. The control condition is a sentence that does not contain the difficulty but that has the same target word.

Favre's study involved German interferences in French sentences. They were of three types (she did not distinguish between static and dynamic interferences either). In the first type, a word form interference, both the form and the meaning of a German word is adapted phonetically and morphologically in French. Here is an example (the interference is in italics and the word to detect is in capital letters):

- (1) Mon professeur de piano me donne toujours des *partitures* LONGUES et difficiles . . .

'Partitures' comes from the German 'Partitur' (score); one would say 'partition' in French.

In the second type of interference, only the meaning of the word is brought in and attached to an existing word in French which is very similar to it. Hence:

- (2) La dernière collection de montres à la *messe* SUISSE . . .

Here the meaning of the German word, 'Messe', which means 'fair' is added to the French word 'messe' (its basic meaning is 'mass'). One would say 'foire' in French.

Finally, the third type of interference involves grammatical constructions mainly involving prepositions. For example,

- (3) Je vais aller *sur* ma chambre AFIN d'étudier . . .

Here, the German preposition is 'auf' (on) which leads the bilingual to say 'sur'; the normal preposition in French would be 'dans'.

Favre tested 40 participants, half were French speaking and knew no German (they were tested in France) and the other half were Swiss-German French bilinguals from the Swiss bilingual town of Bienne (Biel in German). The latter reported having about equal fluency in their two languages and using both languages on a daily basis. The results obtained were as follows. For the first type of interference where both the word form and its meaning is brought in from German, both groups showed slower reaction times to the sentences containing the interference: a difference of 110 ms for the monolinguals and of 58 ms for the bilinguals. Clearly interferences such as 'partitures', 'autogramme', 'dressure' and 'prognose' slowed both groups down. However, monolinguals were slowed down more than bilinguals (this was significant at the .05 level). As for the two other types of interference (meaning transfer only and erroneous grammatical constructions), although there was a trend for slowing down in both groups, it was not major and there was no difference between the groups. For the meaning interferences, a task more sensitive to semantics, such as semantic priming, might have shown an effect. As for the grammatical interferences, putting the target word closer to the interference (mostly prepositions) might also have produced an effect.

What can we conclude from these two studies? Guillelmon showed that bilinguals are not impeded by interferences in a comprehension task whereas monolinguals are. Favre confirmed this with an on-line task but only for interferences that cover both form and meaning. Of course, it is very difficult to compare the two studies as they were different on such factors as the type of processing tapped by the tasks, the types of interference, the stimuli, the participants, etc. Some of these factors might explain why bilinguals showed a slight slowing down with the first type of interference in Favre's study. But what is clear is that bilinguals generally do better than monolinguals when faced with speech containing interferences, although the results may depend of the types of interference used. Future studies will need to investigate further various interferences such as lexical interferences (form and meaning of words, meaning only), syntactic interferences, calques, etc. in both on-line and off-line tasks. They will also need to differentiate between transfer and interference, as I have defined them in section 2, so as to see if they have a differential impact on bilingual listeners.

In conclusion, we see that psycholinguistic approaches can be used to study transfer and interference, just as they have been used to study the processing of code-switching and borrowing (Grosjean, 2008). Hopefully, such studies will continue to be done and will allow us to better

understand how the various bilingual contact phenomena are processed, not only in the bilingual production of language, but also in its perception.

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Notes

1. Some researchers such as Albert and Obler (1978) call on intention as a definitional feature. Hence, they state (p. 12) that interference ‘involves unintentional usage of one language in the course of using the other’. In reality, many other contact phenomena are ‘unintentional’ in bilingual spontaneous speech and therefore this definitional feature is questionable.
2. The situation is so sombre currently in bilingual psycholinguistics that there is a growing myth that processing in the bilingual is non-selective (and hence, by inference, that the bilingual’s languages are active at all times). Study after study announces this ‘truth’ when, upon closer examination of the research situation, the methodology and the stimuli used, one concludes that the other language was being activated bottom-up or that the participants knew that some aspect of their bilingualism was of interest to the researcher. It is no surprise then that the language not being used in the study was also activated, to some extent at least, just in case it could be of help. As a consequence, non-selective processing was found. But this says little about real-life monolingual mode situations where it would be totally counter-productive for bilinguals to activate all their languages since the situation requires just one, and only one, language.

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