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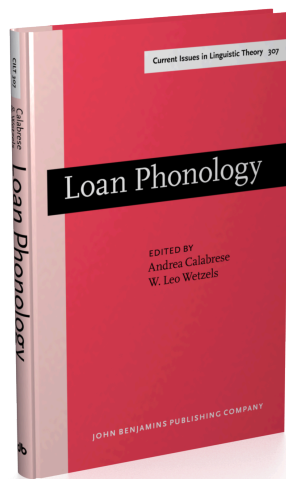
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Early bilingualism as a source of morphonological rules for the adaptation of loanwords

Spanish loanwords in Basque*

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The present socio-cultural situation in the Basque speaking area of Spain offers a privileged field for the study of Spanish loanwords in Basque, due to the more expanded use of Basque, together with a better knowledge of Spanish among Basque speakers. Within the theoretical framework of Natural Phonology, this paper explores some phonological and *lato sensu* morphological mechanisms that take part in the integration of Spanish loanwords into Basque. First it deals with the mutual influence between Spanish and Basque when both are first languages for the speaker. Early bilingualism only causes the loss of Basque processes that are suppressed in Spanish, but those processes need not be completely lost. There is clear evidence that continued collective bilingualism and need of translation motivate the transformation of denaturalised phonological substitutions into morphological devices for the adaptation of loanwords.

1. Phonological influence in early bilingualism

This paper deals with the pronunciation of Spanish-Basque (or vice versa) bilingual speakers of the Autonomous Community of the Basque Country (ACBC). This area offers the most appropriate setting for our study, given its present sociolinguistic situation. It should be noted that Basque and Spanish are both official

*I am grateful to our colleague Enda O Cathain for his invaluable help with English. Any remaining clumsiness is due to my own stubborn ideas. I also wish to thank two anonymous reviewers, whose comments have significantly improved the quality of this paper and its future development in Oñederra (in prep.). Examples are orthographically cited in order to make the reading task easier, as Basque (and Spanish) spelling conventions are quite transparent. It must be noted that in Basque orthography the letter *s* stands for apical sibilants (fricative *s*, affricate *ts*), whereas *z* represents laminal sibilants (fricative *z*, affricate *tz*). Phonetic transcription is provided where spelling may cause some important ambiguity.

languages in the ACBC, and therefore a relatively high degree of collective and individual bilingualism can be found among its inhabitants. Some of them learn Basque as a second language; others acquire Basque and Spanish during childhood. The relatively extended knowledge of Standard Basque is also an important factor in the configuration of the present linguistic situation.

There is a further reason for me to have chosen this area: it is the one I know best, and I take advantage of this opportunity to render my little homage to Kruszewski by quoting his words here. As will be shown later, the basic distinction established in that publication by Kruszewski between different types of alternations is fundamental to the theoretical views underlying this paper.

The German reader would certainly have found this publication much more convincing had I selected German examples. To do so, however, would have required complete competence in colloquial German, which I cannot claim. I was therefore obliged to resort to examples from Polish, my native language, and from Russian, in which I am fluent. (Kruszewski 1978:64)

I furthermore think that direct experience –both sociological and linguistic– is of great import at the present stage of analysis. The study of how the relationship between the two languages develops in our community will be carried along the lines of the theory of Natural Phonology (NP) as proposed by David Stampe (1969, 1979; Donegan & Stampe 1979). Indeed, the subject came up in the process of preparing a book on NP (Oñederra in prep.) applied to Basque, specifically from projection of a concept fundamental to NP, the concept of *phonological process* onto the bilingual context, particularly one type of bilingualism which will –for lack of a better name– be called *close bilingualism*. ‘Close’ is here meant to include the notion of *early* bilingualism, as far as individual development of the speaker is concerned, as well as language contact *continued* over centuries in the collective history of the community. That collective historical dimension will be shown to be essential for the hypothesis presented here.

A phonological process as conceptualised in NP is “a mental operation that changes a given segment or sequence that presents an articulatory or perceptual difficulty into another segment or sequence that lacks that difficulty” (Hurch 1988:350). I will try to show how this is a useful tool that may enable us to predict when phonological interference of one language over the other should take place in bilingual speech, and what the (phonetic) shape of such an interference would be (see Section 2 below).

The NP concept of phonological process will allow us to diagnose (a) the degree of bilingual competence of individual speakers, and (b) the general state or productivity of Basque sound substitutions. In other words, the analysis of the speaker’s active phonological processes will measure how robust the phonological

system of each language is, given what can be expected when two languages have been acquired in early childhood. When phonological competence is not even, precedence of one language over the other should be detected for each pronunciation phenomenon observed (see different situations in Section 2).

In Section 3 the concept of *morphonological rule* developed by NP will be the complementary theoretical resource to account for a phenomenon which is particularly productive in Basque nowadays: the use or ‘recycling’, as translation rules in the adaptation of loanwords from Spanish, of processes which have lost their phonological status (see Section 3 below). Although that loss of phonological status (i.e. phonetically motivated productivity) may or may not be due to the influence of Spanish, this paper will focus on those cases where early bilingualism seems to play a fundamental role.

From the NP perspective, a rule is phonetically conventional and “distinct in its nature, evolution, psychological status and causality” (Donegan & Stampe 1979:127) from a process. Rules may take on morphological motivation, though that is not necessary. Among the phonetically conventional sound alternations Kruszewski (1978:70,73) distinguishes alternations without a morphological function whatsoever (The Second Category) from those that may be linked to such a function (The Third Category). But, as far as the explanatory realm of phonology reaches, the fundamental limit lies between phonology and grammar, as solidly established by Sapir or Kruszewski (see Donegan & Stampe 1979:127), and now developed by NP.

This paper argues that the ACBC bilingual setting provides a particularly appropriate atmosphere for a given type of morphological rules to develop, which will ultimately be used to change the phonological configuration of Spanish words borrowed by Basque.

Sound substitutions that have lost their phonetic motivation, but nevertheless remain in the language, may eventually become such morphonological rules. This transformation can be analysed as a sign of linguistic health in the bilingual setting which, in turn, would demonstrate the functionality –and hence productivity in synchronic terms– of a certain type of morphonological rule that would develop in some situations of ‘conscious’ bilingualism. In that sense, this work may contribute to the development of some theoretical elements of NP by their application to the bilingual scenario.

The term ‘morphonological’ (i.e. morpho-phonological) may be senseless, at least from a purely functional point of view. As will be claimed in Section 3, sooner or later these rules become functionally equivalent to morphological suffix-correspondence rules, only that, as a consequence of the fact that they result from originally *phonological* differences between the two languages, these rules tend to produce phonologically more similar pairs of words than other correspondence

patterns based on lexical differences (like, e.g. adjective-forming Spanish *-ble* > Basque *-garri*, or verb-forming Spanish *-r* > Basque *-tu*). In fact they often are a means of translating what may be analysed as a suffix in Spanish by what is considered its Basque counterpart, phonologically similar but different enough (due to the correspondence pattern established by the sound substitution). The alleged suffix need not be so grammatically (see in Section 3 examples of Spanish *-ón* as in *botón* ‘button’, *futón* ‘futon’, etc.), but are, as Picard and Nicol (1982:165) would say, “psychologiquement réel et morphologiquement productif”.

The main reason to keep the term morphonological is the wish to underline the frequent phonological origin of these rules. It should also be added that, following Stampé’s NP, there is a clear-cut categorical distinction between phonological and non-phonological phenomena: once a substitution has lost its phonetic motivation, it is not part of phonology proper. So calling it morphonological or simply morphological is, at most, secondary.¹

Besides, ‘morphonological’ is particularly adequate referred to the phenomenon of sibilant affrication in Basque, which will be the main illustration of the ideas proposed in this paper (e.g. Spanish *consigna* > Basque *kontsigna*, see Section 3). Indeed it will be proposed that the change from process into rule of post-sonorant affrication is happening at present. Therefore phonetic motivation is still quite transparent. It might even be the case that it still keeps its phonological status for some speakers, while it has already become morphological for others. On the other hand, it is not possible to analyse affrication as a suffix correspondence rule, since the fricative-affricate substitution is stem-internal and cannot be segmented as a suffix.

2. Early bilingualism: Denaturalisation of processes?

Close bilingualism refers to two first languages, i.e. when two languages are acquired more or less simultaneously.² In order to limit the period of acquisition somehow, however approximately, we can say that the speaker must have enough exposure to the two languages during her/his phonological formation, that is, the period during which the language specific options she or he is acquiring have not yet become a perceptual or productive constraint. Since that transformation from option into

1. See the seminal work by Dressler (1985) for a different (gradual transition from phonology to morphology) proposal within the NP paradigm.

2. We could also call it native knowledge of both.

constraint seems to be over by adolescence, both languages should have been acquired before then.

Gradually we constrain those processes which are not also applicable in the mature language (...). From adolescence usually there is little further change, and the residual processes have become the limits of our phonological universe, governing our pronunciation and perception even of foreign, invented, and spoonerized words, imposing a 'substratum' accent on languages we subsequently learn, and labeling us as to national, regional, and social origins. (Donegan & Stampe 1979:126–127)

At present, practically every individual who speaks Basque as a first language has also acquired Spanish before adolescence in the ACBC. The same could be said about Basque and French in the Basque speaking area of France. Due to the different phonological characteristics of French, that area offers a very interesting point of reference and contrast indeed, which should be taken up by future research.³

In order to proceed in the analysis of the double phonological acquisition in the ACBC, let us now return to the concept of *phonological process*, and consider the theory of NP, where processes are

(...) mental substitutions which systematically but subconsciously adapt our phonological intentions to our phonetic capacities, and which conversely enable us to perceive in others' speech the intentions underlying these superficial phonetic adaptations. (Donegan & Stampe 1979:126)

A phonological process is, therefore, a mental substitution that responds to a phonetic, i.e. physical, difficulty related to the articulation or perception of segments and sequences. Those difficulties are *per se* universal and so are the natural processes that eliminate them. But not all languages retain the same processes in their phonological systems. In short, for those who may not be familiar with the theory, it is a language-specific option:

- a. to avoid a given phonetic difficulty (e.g. context-free vowel nasalization) by *allowing* a certain process to apply (i.e. vowel denasalization), or
- b. to *overcome* the process by learning how to pronounce and perceive the difficult phonetic configuration. That segmental or sequential configuration will then become part of the phonology of that given language where the phonological process (that would have relieved the speaker from having to cope with the difficulty) will no longer be present. In other words, at a given moment during

3. The significant socio-political differences would also add to the interest of such an investigation.

the speaker's language acquisition, that process will disappear from her/his actual and potential competence.

If the eliminated process is a context-free process (that would have avoided a segmental difficulty), the language adds one phoneme or phoneme class to its inner phonemic inventory. If the eliminated process is a context-sensitive one (that would have avoided a sequential difficulty), the language will have one more possible sound sequence (that speakers will be able to distinguish and intentionally pronounce). If the process had prevailed, that sequence would be excluded.

Consequently, therefore, for each phoneme or phoneme class that is acquired a context-free paradigmatic process must be eliminated. So, French must have overcome the universal process $V \rightarrow [-\text{nasal}]$ of vowel denasalization (motivated by the phonetic optimality –better articulatory and perceptual quality– of oral vowels), in order to have both oral and nasal vowels in its phonemic inventory; Basque must have overcome the universal process $[+\text{strident}] \rightarrow [+ \text{cont}]$,⁴ in order to have both phonemic fricative and affricate sibilants.

In the same way, each new acquired sequence brings about the elimination of a context-sensitive syntagmatic process. Languages with voiceless intervocalic obstruents are a clear example: the universal phonetically motivated process of intervocalic obstruent voicing must have been overcome by their speakers in order to be able to produce sequences of *vowel-voiced obstruent-vowel* vs. *vowel-voiceless obstruent-vowel*. Put simply, languages that allow the process to apply will only have *vowel-voiced obstruent-vowel* sequences (e.g. S. Chinook or Sanskrit, see Donegan 1995:64–65).

Processes are not borrowed as such.⁵ How could they be since they are universal? What one language may borrow from another is the elimination of a given process. That is a language specific option, which may be the source of differences between two languages and the cause of interference in close contact situations. It is not hard to believe that, if two languages co-exist during acquisition, any phonetic, i.e.

4. The exact name of the feature chosen is not so important here. It may be more useful descriptively to talk about continuant sibilants, instead of the Jakobsonian labels used. The ultimate goal in the choice of labels would be to be as close as possible to the most plausible phonetic explanations for the substitution at hand. Experimental phonologists could be called on for help here.

5. There might be activated latent processes that may look like borrowed processes. See Churma 1984:226, Hurch 1988b, on latent processes. See also Calabrese (this volume, "Acoustic inputs and phonological discrimination") about crucial age of exposure to the most discriminating language.

physical, difficulty overcome by a speaker in the phonological acquisition of one of her/his two languages will become an ability of that speaker, a perceptual and articulatory resource of her/his linguistic competence, available to her/him when facing the task of perception and production of the other language. The process of acquisition can be seen as a series of changes in the sound pattern of a speaker, which recalls Donegan (1993:98): “sound changes are changes in the speaker’s phonetic abilities”.

In other words, when a speaker has enough phonological command of two languages LA (language A) and LB (language B) due to early enough acquisition of both, different specific choices within LA and LB when faced by the same phonetic difficulty may result in conflict. But, given that a process is the realization of a phonetic limitation, the reflection of a physical difficulty, a certain pattern can be predicted for the resolution of that conflict. For instance, if LA allows a natural process $X \rightarrow Y$ to apply in order to solve the phonetic problem, but LB overcomes the difficulty by eliminating the facilitating process $X \rightarrow Y$ from its phonological system (where X will be integrated), the speaker who has acquired phonologies A and B will be able to overcome difficulty X, and will not *need* to apply the process $X \rightarrow Y$ either in LB (where X exists normally) or in LA. LA may keep the process as an optional more or less productive substitution. A good example of this is the affrication of sibilants following sonorant consonants in Basque (e.g. *pentsatu* “to think”), non-existent in Spanish (cf. *pensar* “to think”) and not anymore a necessity in the pronunciation-perception of Basque-Spanish bilingual speakers (i.e. pattern (a) below).

At this point it may be worth giving some thought to the fact that if acquisition is bilingual, phonological transfer from one language to the other will not depend on sociological language dominance, but on the actual process-share of each of the phonological systems in contact. Some specific cases from the Basque-Spanish contact will illustrate three possible patterns of process distribution between the two languages:

- a. when Basque keeps a process that Spanish does not allow,
- b. when Spanish keeps a process that Basque has overcome, and
- c. when both languages keep a process.

Situation (a) Basque keeps a process that Spanish has overcome. For example, affrication after sonorant consonant applies in Basque, but not in Spanish (cf. Basque *pentsatu*, Spanish *pensar* “to think” from Latin *pensare*). It is clear that the articulatory capacity to pronounce sibilant fricatives after a sonorant consonant, which an early bilingual speaker must have mastered in order to cope with the phonology

of Spanish, enables him or her to also pronounce them in Basque. Therefore the process of *sequenced* nasal-sibilant transition of Basque phonology becomes at most an optional substitution. It follows automatically therefore, that any Basque process that does not have an equivalent counterpart in Spanish will not be an obligatory phonological process in the linguistic competence of an early Basque-Spanish bilingual speaker.⁶

A paradigmatic context-free example of the same situation (Basque applies a process, but Spanish does not) can be observed in the process whereby all coronal fricatives are turned into sibilants in Basque, while this process is absent in Castilian Spanish.⁷ This leaves Castilian Spanish with a basic contrast between /θ/ and /s/ (cf. *casa* [kasa] “house” vs. *caza* [ka θa] “hunt”), which is absent from the phonemic inventory of Basque. However, if Spanish is acquired early enough, the process will be eliminated, and bilingual speakers will be perfectly able to perceive and intentionally produce (see modern loanwords like *pro*[θ]esu “process”, *so*[θ]iologia “sociology”, [θ]entro “center” of bilingual speakers who are not constrained by the Basque process any more).

Situation (b) Spanish keeps a process that Basque has overcome. This situation can be illustrated by the paradigmatic context-free choice that links palatality of obstruents with affrication in Spanish, but not in (most dialects of) Basque. As a consequence of this, the only palatal obstruent in the phonemic inventory of Spanish is /tʃ/, whereas the Basque inventory adds /c/ to /tʃ/.

Basque phonology of early bilinguals will not be affected under these circumstances. The phonology of the language is immune to interference in situation (b), no matter how strong the sociological influence of Spanish might be. Once a process has been overcome, nothing should be able to reactivate it as such a process. What is crucial here is the degree of phonological competence (i.e. phonetic command) that is usually guaranteed by early acquisition. At any rate, if the Basque pronunciation of bilingual speakers shows traces of this interference, this will be a sign of asymmetry, showing that Spanish has taken precedence over Basque during acquisition. The truly early bilingual will have a larger inventory of phonemes (ergo perceptual discrimination capacity) and/or more types of sound sequences will be possible for her/him.

Examples of this type are easy to find in the Basque-Spanish setting among paradigmatic context-free processes. As well as the palatal stop that is added to the affricate in Basque, we find that the Basque phonemic inventory, on top

6. Its first stage could easily consist in becoming a regular process systematically applying to native forms, but only optionally to loanwords and neologisms. It could then become a morphonological rule (see below, Section 3).

7. Castilian is the Spanish variety spoken by Basque-Spanish bilinguals in the ACBC.

of distinguishing three fricative sibilants (apical alveolar, laminal alveolar and pre-palatal), includes affricate counterparts of all of them. Being perfectly competent in Spanish does not do any harm in this case. Bilingual speakers have both affricate and fricative (laminal and apical) sibilants in their phonemic inventory, or both affricate palatals and palatal stops. Neither the latter nor the affricate sibilants will be used in their pronunciation of Spanish native forms, but they may be helpful when ordering a *pizza*, with which monolingual Spanish speakers have some difficulty ([pitʃa], [pisa], [piθa] are common among monolingual speakers).

As said before, in order for Basque to be immune to Spanish interference under the circumstances characterized as situation (b), both languages with their whole phonological systems must be, so to speak, first languages (L1), in actual fact and not only apparently, ideologically or intended. In other words, if a bilingual speaker acquires Spanish as her/his L1 (i.e. acquires phonic command of Spanish) and only learns Basque some time later (when phonetic options have become phonological limitations), her/his pronunciation of affricates or the palatal stop in Basque may be affected: she/he will tend to make sibilants always fricative, or to reduce affricates to palatal [tʃ]), will substitute /tʃ/ for Basque /c/.⁸

Situation (c) The third possible pattern is that in which neither Basque nor Spanish overcome a phonetic difficulty, i.e. both Basque and Spanish allow one given process to apply.⁹ All the processes shared by both languages are to be included here, like the context-free denasalization (V → [-nasal]) that explains why Basque and Spanish only have oral vowels in their phonemic inventories. Among context-sensitive processes, a good example is intervocalic assibilation of voiced stops, which is productive in both languages.

When the two languages share a process, no change can be induced by any of the two languages onto the other one. So, we can say that phonological interference from a given language B (LB) on language A (LA) in early bilingualism will only happen when LB has eliminated a process that is active in the phonology of LA (situation (b) above). However, given that eliminating a process implies having overcome a given phonetic difficulty, giving up the process not shared by LB will

8. This is a particularly interesting subject for comparison with the production of French-Basque bilinguals, as French lacks /tʃ/. Of course, late acquisition and early acquisition of incomplete inventories from parents or teachers may yield similar results.

9. The latter formulation is actually more precise. Things would probably be different if Basque and Spanish would admit a certain difficulty by making use of two different processes. The relatively common choices of Basque and Spanish allow me to avoid –for the time being– this issue which, however interesting, falls outside the reach of this paper. At first sight, it would appear that no problem (interference) should arise: cf. English *ss* → *ses* (*fishes*) vs. Basque *ss* → *ts*; Spanish *d#* → (ð) → ø, *d#* → θ vs. Basque *d#* → *t*. All of these, however, should fall under either situation (a) or (b), and they must be analysed separately.

bring about the gain of new phonemic units or sequences in LA. Speakers will have mastered the phonetic difficulty that the process avoided, being consequently more capable in terms of phonological productivity and perception.¹⁰

In general terms, the prediction would be that the more *natural* LA is (i.e. the more natural universal phonetic processes LA keeps active in its phonology) and the less natural LB is, more change early bilingualism should bring to LA. Processes that LA could have kept in isolation (or when LB is only learned at best as a second language) will become optional for early bilingual speakers, or they will disappear completely from their phonology. In other words, a more 'elaborated' phonology (a phonological system that distinguishes more units or sequences, because of having overcome more natural processes) is more 'harmful' in terms of phonological influence on a less elaborated or more natural phonological system, because it will raise more instances of situation (a).¹¹

3. Metamorphosis: From pronunciation to translation

Once a given substitution $X \rightarrow Y$ has been liberated from its phonetic conditioning in LA, due to mastery of the corresponding phonetic difficulty during acquisition of an LB that does not apply process $X \rightarrow Y$, what we have is a change from input X to output Y available to other possible linguistic functions. Put it in a different way, the substitution is no longer something that makes X (better) pronounceable or perceptible, it is not phonetically necessary any more in LA. The ability reached in the acquisition of LB makes the substitution phonetically superfluous. However, as we often see, some of these substitutions may well change qualitatively, and become morphonological rules, which may then acquire a grammatical or lexical function. I want to argue here that in a bilingual society, one of the possible functions of such rules is that of obtaining Basque forms from originally Spanish words (e.g. see below Basque $ns \rightarrow nts$, as in Spanish *consigna* > Basque *kontsigna*).

10. Careful distinction must be made in the description of the two languages between non-existent (but possible) sounds or sequences and the impossible ones, eliminated by active processes as discussed by Pensado (1985/1999).

11. The Research Project (UPV05/81) now being undertaken by musicologists and linguists from the University of the Basque Country pursues the goal of a deeper understanding of Spanish and Basque prosodic patterns that may well be the fundamental basis of these two languages sharing so much of their phonologies. The comparison with French-Basque bilingualism is of great importance at this point, since French overcomes more natural processes than both Spanish and Basque.

A plausible requisite for that to be true is that the substitution should be phonemic (i.e. perceptible and memorizable by the speaker). Another important factor contributing to the metamorphosis at hand seems to be the productivity of the substitution in LA. That, together with a long history of permanent language contact, will increase the probability of parallel but crucially different cognates in the two languages. Then speakers may feel the substitution as 'proper pronunciation' in LA, even after phonetic motivation and justification is lost due to early bilingualism.

The following necessary characteristics are now present in the Basque-Spanish speaking community in the ACBC:

- a. A long history of continuous language contact, which helps to develop and consolidate patterns of cognates for words stemming from common etymos.
- b. A more expanded and complete knowledge of Spanish among Basque speakers, who are now practically all bilinguals. A gradual increase has occurred in the class of people who would in previous generations have had a reduced competence in Spanish, but who have a full command of it now. Other speakers were Basque monolinguals and are now Spanish-Basque bilingual speakers.¹² Early bilingualism has also increased, which strengthens the chance for Basque processes not shared by Spanish to lose their phonological productivity.
- c. The recent increase of Basque among new learners, as well as (very importantly) its expansion to new linguistic areas due to the officialization of the language, and the subsequent need for the urgent translation of Spanish words. This enhances the chances of processes becoming (translation) rules.

All these sociological factors create the motivation for the above mentioned metamorphosis: the phonological processes that cease to be so and are then free to take on other functions, become morphonological rules of loanword adaptation for bilingual speakers and a possible model or reference for the not so early ones.¹³

Continuous bilingualism is (and has long been) motivation for the productivity of rules derived from denaturalised processes (i.e. substitutions that are no longer

12. Causes for this expansion of Spanish have been externally imposed or voluntarily adopted. It would of course take longer than is either possible or necessary here to say all there is to say on this from a sociolinguistic point of view.

13. Pronunciations of not so early bilinguals like *deskan*[tʃ]oa (for *deskan*[ts]oa) from Spanish *descanso* (vs. vernacular *atsedena*) show that the rule of affrication may be used, even by speakers who lack the appropriate affricate (since, as a result of Spanish precedence in the configuration of their phonemic inventory, they never eliminated thoroughly the process reducing affricates to /tʃ/).

phonetically motivated) as well as of rules that have a different source. For example, vowel prothesis before word initial trills stems from an old phonological process attested to in Basque, common to all dialectal varieties. Vowel prothesis before a word initial trill is now a rule productive only in the adaptation of some loanwords, like Spanish *radical* > Basque *erradikal* “radical, extreme”, Spanish *reseña* > Basque *erreseina* “review”. Apart from this, trill initial forms can easily be found in Basque at present (e.g. *radar*, *radikal*, etc. among less purist speakers; cf. also the common form of proper names like *Ramon*, *Rosa* vs. old or literary *Erramun*, *Errosa*).¹⁴

Other correspondences also exist due to the different phonological choices of each language. Some of them are productive as translation rules, among others: Spanish (but not Basque) final [e] elision in Latin forms has yielded pairs like Spanish *amor* vs. Basque *amore* from Latin *amore(m)* “love” (Michelena 1995:146).

Lack of final [e] elision in Basque together with Basque (but not Spanish) intervocalic nasal deletion, followed by vocalic quality change and desyllabification, produced pairs like Spanish *león* vs. Basque *leoi* [leoj] from Latin *leone(m)*.¹⁵ Although both nasal deletion in Basque and final [e] elision in Spanish ceased to be part of phonology a long time ago, their diachronic results productively apply in the adaptation of new loanwords, like Spanish *botón* “button”, *camión* “truck”, *futón* “futon”, *evaluación* “evaluation” > Basque *botoi*, *kamioi*, *futoi*, *ebaluazioi*;¹⁶ on the other hand Spanish *contestador* “answering machine”, *radiador* “radiator” > Basque *kontestadore*, *radiadore* show the productivity of a synchronic rule of final [e] epenthesis which follows the pattern of that final [e] that Basque kept but Spanish deleted.

Intervocalic voicing, which took place at a certain stage in the history of Spanish (but not Basque), also belongs here. Voicing, followed by the already mentioned

14. Previous analyses of vowel prothesis have been carried out under different theoretical assumptions. But, whatever the differences are among authors, they never account for the qualitative distinction between diachronically attested and living phonological patterns of the language. See among those who acknowledge that prothesis is not phonologically productive at present (still listing it as part of the phonological characteristics of Basque), Hass (1992:36). Similarly Trask (1997:146) points out the acquisition of word-initial [r] in loans, but no further consequence is derived.

15. Hualde (2000:349) offers a detailed summary of the phonological evolution of those words in Basque and Romance.

16. The latter is normatively wrong, as older Latin *-tione* endings correspond to Basque *-zio*. It has been included here, because this overgeneralization can be seen as a clear proof of the productivity of these rules in their new non-phonological domains. And also because it overrides Hualde’s interpretation, according to which the Spanish *-ón* > Basque *-oi* change is bled by “the more specific rule, which reflects a correspondence between suffixes” (Hualde 2000:349).

final [e] elision, underlies old cognates like Spanish *universidad* vs. Basque *unibertsitate* from Latin *universitate(m)* or Spanish *virtud* vs. Basque *birtute* from Latin *virtute(m)*. These pairs must have set the pattern for the nowadays productive devoicing of equivalent suffixes being translated into Basque, like Spanish *idoneidad* (a certain type of qualification for jobs at the university), *titularidad* “tenure”, *oportunidad* “opportunity” becoming Basque *idoneitate*, *titularitate*, *oportunitate* (occasional for vernacular *aukera*).¹⁷

On the other hand and back again to patterns emerging from processes that Basque has applied but Spanish has not, we find the affrication of sibilants following sonorant consonants. This affrication is particularly interesting, since it is a sound substitution which is changing from process into rule in the present day. Cognates result from an evolution that had already begun when Latin forms were adopted along different phonological paths in Spanish and Basque: cf. Spanish *oso* from Latin *ursu(m)* “bear”, Basque (*h*)artz “bear” (from Latin *ursu(m)*?, cf. at any rate Aquitainian *Harsus*). Some correspondences must stem from the time when the present Castilian Spanish interdental was still a sibilant (i.e. before the 16th or 17th centuries, Cano 2004:843). It is clear that, for example, Basque *dantza* [dantsa] “dance” was not ‘phonologically’ derived from Spanish *danza* pronounced [danθa]. But nowadays [ts] substitutes for [θ] as a result of the systematic translation rule that productively changes Spanish *pinza* [pinθa] “tweezers”, *trance* [tranθe], *sentencia* [senteñθja] “law sentence”, etc. into Basque *pintza*, *trantze*, *sententzia*, etc., phonetic opacity being an exclusive characteristic of rules (vis-à-vis phonetically motivated processes). As a matter of fact, one source of affrication may already be present in some stages of the Romance evolution.¹⁸

In order to develop an analysis of the present situation of Basque affrication of sibilants following sonorant consonants, let us focus on examples of its synchronic application to Spanish loanwords like *consigna* “slogan”, *corresponsal* “correspondent

17. Whether these word-endings are analysed by speakers as suffixes or we are dealing with word-adaptation patterns would be an interesting subject, but it is beyond the scope of this paper. In any case, it may be worth noting that these endings are never attached to non-borrowed stems. See Oñederra 2002, for a more complete, though by no means exhaustive, list of this type of rules.

18. As seen before, rules are often old processes which have become obsolete, and are not to be synchronically explained by phonetic characteristics of the language (e.g. Spanish intervocalic voicing attested by Latin *-tate* becoming *-dad*); other rules accumulate the effect of several processes which have diachronically fed the present result (e.g. nasal deletion, vowel change and desyllabification in Latin *leone(m)* > Basque *leoi* [leoj]). Following Kruszewski (1978:70), “The causes or conditions of such an alternation can only be discovered by investigating the history of the language”, and they can even be “completely unknown” (Kruszewski 1978:74).

(reporter)” and *insumisión* “movement against military service”, which have become Basque *kontsigna*, *korrespontsala*, *intsumisio* (also *intsumisioi*, see Fn. 16). We should bear in mind the basic notions of the theory of NP recapitulated here:

- a. Changes in phonology are changes in the phonetic capacities of speakers.
- b. There is a clear-cut boundary between phonology and morphology, drawn by the interplay between the phonetic motivation of the phonological dimension and its absence on the morphological side of the boundary.
- c. Phonological substitutions can cease to be so (ontologically, so to speak) and become part of morphology. That is known at least since Kruszewski taught at the end of the XIX century (see Kruszewski 1978) and Wurzel (1980) developed the idea within the NP framework. In this paper we go on to imply that those substitutions might become part of morphology as lexicon formation devices.

From the point of view of NP, the affrication of sibilants after sonorant consonants in itself may perfectly be seen as a phonological process, a constraint, a need that responds to the phonetic complexities of nasal-sibilant or liquid-sibilant transitions.¹⁹ As a process, it allows present day Basque speakers to avoid the complex transition in *kontsigna* “slogan”, *boltsa* “bag” or *kurtso* “course” (from Spanish *con-signa*, *bolsa*, *curso*), or in alternating Basque forms like the auxiliary verbal form at the end of *ekarri[s]uen* “he/she brought (it)” vs. *esan[ts]uen* “he/she said (it)”, in the same way that earlier generations did when they first pronounced (h)*artz* “bear”, *faltsua* “false” or *dantza* “dance”. But if speakers are confronted with the phonology of Spanish, which does not allow the facilitating process to apply, in early childhood (that is, before their phonetic abilities become their phonological limitations, when abilities can still grow and expand with no effort) the relatively more difficult sonorant-sibilant consonant sequence will be learned. Substituting an affricate will no longer be a phonological need for that speaker. This is why sibilant affrication no longer forms part of the phonology of most Basque speakers nowadays. There is no phonological trend in the substitution. It happens in words in which it has been lexicalised and so learned when learning the inner representation of the lexicon. Only speakers who still have alternations in morpheme

19. Busà (2007) offers an excellent review of the phonetic and phonological work done so far on nasal-sibilant sequences, together with an interesting comparative work on Italian affrication (vs. English), and promising paths for future research. I wish to thank Maria Josep Solé for letting me know about this paper, which was still in press, when we met at the PAPI 2007 conference in Braga. Jauregi & Oñederra (2008) explores phonetic and phonological characteristics of the liquid-sibilant sequences in Basque.

boundaries may be said to keep the process (although only optionally in most cases). The systematic application of the substitution to loanwords would be the consequence of its new status as a morphonological rule of loanword adaptation (through the morphological function of forming *Basque* words).

As pointed out before, certain features are constant in this type of transformation from phonological processes into morphonological rules for the adaptation of loanwords:

- a. Initially, different choices of Basque and Spanish phonologies for a given phonetic difficulty which can be observed in the morpheme internal consonant sequences of native forms, i.e. sonorant-fricative sequences are perfectly regular in Spanish (*pensar* “to think”, *cansado* “tired”, *cursi* “ridiculous”, *pulso* “pulse”), but impossible in Basque (***anza*, ***elze*, ***hersi* vs. *antza* “similarity”, *eltze* “pot”, *hertsi* “close”).
- b. Next, bilingual speakers become conscious of the fact that there are correspondences between similar but slightly different forms in Spanish and Basque (cognates like *pensar/pentsatu*).
- c. Finally, speakers use the relative difference as a means to translate Spanish words into Basque, taking a substitution which is no longer part of their phonetic limitations as the basis for the nativization of Spanish forms.²⁰

As far as the phonological analysis is concerned, it is important to note that the process ceases to be an obligatory process of Basque phonology, if it does not disappear altogether. That is, *close* bilingualism does not perhaps mean the immediate loss of a process in Basque, because of Spanish acquisition, but the process will become optional, and therefore weaker. Once that occurs, bilingualism will intensify and speed up the transformation of the substitution into a morphonological rule, which will then be functionally motivated as a translation rule.

4. A first provisional conclusion

Although loss of phonetic motivation and, therefore, phonological status of a given substitution may be caused by bilingual acquisition of individual speakers,

20. Hualde (in Hualde & Ortiz de Urbina 2003:62), though clearly stating that “In this adaptation one can see a conscious attempt to preserve aspects of the traditional phonology of the Basque language”, still considers affrication part of the synchronic Basque phonology. That of course is what could be expected from his theoretical standpoint, in which phonetic motivation is not a structural property of phonology.

productive use of that substitution as a translating device will require some collective support.

On the other hand, our incipient study on Basque shows that enough early bilinguals who master the phonological system of the language are necessary so that Basque phonological alternations survive, even if they will no longer be sustained by phonological processes but used as a way of adapting Spanish loanwords. At least in the period when the transformation of a process into a rule takes place in the language, only if enough speakers keep the substitution as part of their first language acquisition, will a productive pattern of correspondence between the two languages be structured. From then on the substitution can productively survive as any other rule of loanword adaptation (examples of those rules were given in Section 3).

It is clear that bilingualism can be the reason for the weakening and eventual loss of phonological processes in one language, whenever those processes are absent in the other language simultaneously acquired. It is clear that, from a strictly phonological point of view:²¹

The most interesting interference phenomena attested by loanwords come to light when the speakers of L_T , who borrow from L_S are nearly monolingual, or when these mediators are imitated by monolingual speakers of L_T with no attempt to adjust their speech habits to the phonology of L_S . We may expect less evidence of extreme interference proportional to the greater degree of bilingualism of the borrowers (...). (Lovins 1975:6)

But bilingualism is also the source of motivation for the transformation of the ‘ousted’ phonological substitutions to stay productively in the language as morphological rules, and for their generalization in their new domains. For that to be true, however, individual bilingualism must be continued by socially strong bilingualism. Somehow, we are seeing that the loss of phonological processes can lead to the birth of new morphological translation resources. We are therefore not talking about “phonologically unmotivated changes” (cf. Hualde 1993) or “essentially arbitrary rules” (Hualde 2000:348), but about changes that have a substantially different kind of motivation, which lies out of phonology proper. In other words, we are simply not talking about phonology any more. Of course the sociocultural conditions present now in the ACBC, where Basque is officially supported and ideologically prestigious among its *active* speakers, are essential for this second stage to develop, and they should be carefully studied.

21. Cf. Calabrese’s (this volume) Introduction on the two possible sources of loanwords.

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