3 Contact, Convergence, and Typology

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1 A Definition of Contact

Although Weinreich (1953), the pioneer of language contact studies, remarked that the true locus of language contact is the bilingual individual, much of the contemporary research in the field is guided by the assumption that language contact is about the way in which linguistic systems influence one another. Contact-induced language change is consequently seen as change that is "external" to the language system. I follow an approach to language contact that is based on a view of language as the practice of communicative interaction, and of grammatical categories as triggers of language processing tasks. According to this approach, the speaker's choice of structures and forms matches the linguistic task-schema that the speaker wishes to carry out. This, in turn, is subordinate to the goal-oriented activity that the speaker pursues through verbal communication in discourse. My assumption is that bilinguals – whether "balanced" or "fluent" bilinguals, or "secondary," "late," or "partial" bilinguals – do not, in fact, organize their communication in the form of two "languages" or "linguistic systems."

Rather, bilinguals have an enriched and extended repertoire of linguistic structures at their disposal. As part of their linguistic socialization, they learn which word form, construction, or prosody pattern is appropriate in a specific context of interaction. Some contexts allow greater flexibility of choices. These are the contexts in which bilinguals can make the most effective use of their full repertoire, exploiting nuances as well as contrasts between variants of equivalent or near-equivalent meaning (cf. Grosjean’s 2001 notion of “bilingual mode”). Other sets of contexts are more exclusive with regard to the selection of structures within the repertoire.

Rules governing the selection of context-appropriate structures form part of bilinguals’ communicative competence. They operate on the basis of established associations between a subset of structures and a set of interaction contexts. As a society
we draw on this association to construct our notion of a “language” or “language system.” Bilingual children become exposed to this socially constructed narrative line – the idea that they speak two “languages” – around the age of 2.6–3. Until then, their use of word forms and constructions is governed by a prolonged process of trial and error that is usually unaccompanied by any explicit analytical labeling of the elements of their repertoire.

An association between structure and a specific set of interaction contexts does not necessarily exist for each and every item in the linguistic repertoire. German–English bilinguals, for example, accept that their repertoire contains only one single word form for concepts such as “internet,” “download,” “computer” (subject of course to embedding in different phonological and morphosyntactic environments). Speakers of the Jerusalem variety of Domari, an endangered New Indo-Aryan language spoken by small and dispersed communities in the Middle East, take for granted that their repertoire of linguistic structures contains only a single set of conjunctions, interjections, focus particles, and discourse markers, which are all shared by Domari and its contact language, Arabic. In historical-descriptive terms, German has “borrowed” the words Internet, Computer, and downloaden from English, and Domari has “borrowed” its entire set of conjunctions and discourse particles from Arabic in a situation of “contact,” where at least some speakers alternated between the use of two languages.

In the model pursued here, language contact phenomena or “borrowings” are regarded as the outcome of function-driven choices in which speakers license themselves, while interacting in one set of contexts, to employ a structure (word form, construction, meaning, phonological features, etc.), despite its original association with a different set of interaction contexts. When claiming that choices are function-driven, I am not suggesting that the selection of structures is necessarily conscious, deliberate, or strategic. I propose that contact phenomena are arranged on a continuum, from those that are not at all voluntary (e.g. phenomena known as “interference” or “transfer,” or errors in the selection of the appropriate language form), indeed even counter-strategic in their origin (cf. Matras 2000 and 2007a), to those that are conscious and deliberate (such as language mixing for stylistic purposes). All, however, are functional in the sense that they are the product of language processing in goal-oriented communicative interaction. The susceptibility of certain structural categories to contact-related change is therefore not accidental, but inherently bound with the task-oriented function that those categories have, i.e. with the way they support language processing in discourse. Contact phenomena are in this respect seen as enabling rather than as interfering with communicative activity.

I shall be following this perspective in the next sections, where I take up two main issues: The first is the process that is captured by the notion of “convergence,” its functionality, and its potential effects on the typological profile of languages. The second is a typological-universalist approach to structural borrowing in language contact situations.
2 Convergence

2.1 Matter and pattern

A very broad interpretation of the term “language convergence” might imply an increase in similarities between two languages at any level: lexical, phonological, typological (cf. Silva-Corvalán 1994: 4–5). In practice, the term tends to be used most often with reference to the kind of constructions that are best described as linguistic patterns, i.e. those that involve a specific mapping relation of meaning to form, or a structural relation among two or more word forms, expressed for instance through their position. This distinguishes patterns from linguistic matter, which is the concrete phonological shape of morphemes and word-forms (see Matras 2009; Matras & Sakel 2007).

This distinction is well established in the literature on language contact. Haugen (1950) speaks of “calques,” a term that has received wide circulation, and Weinreich (1953) speaks of “convergent development” to describe a change in the function of morphemes that takes place in a “replica language,” inspired by a “model language” (see also Heath 1984: 367 for the term “pattern transfer”). Myers-Scotton (2006: 271) describes convergence as a combination of surface-level forms from one language, with an underlying abstract lexical structure from another language (cf. also Bolonyai 1998). Discussing a Melanesian case study, Ross (1996, 2001) coins the term “metatyp” to denote the sharing of organizational structures across languages in a situation where social attitudes disfavor the replication of concrete word forms whose origin in another language is easily identifiable.

2.2 Convergence and grammaticalization theory

Growing interest in functionalist explanations of language change and the rise of grammaticalization theory (e.g. Heine, Claudi, & Hünnemeyer 1991; Hopper & Traugott 1993) had an impact on the study of language convergence. In particular, language typologists identified contact as a potential trigger for typological change and sought to apply functional-typological models to explain this kind of change. Many contact linguists, too, recognized that grammaticalization was involved in many of the structural processes of change observed in contact situations. The development of operational structures in creole languages, for example, can be described largely as a process of grammaticalization of lexical material from the lexifier language, giving rise to a new approach to the relationship between the source or lexifier language and creoles (cf. Keeling 1991; Bruyn 1996; Plag 2002; Heine 2005; and see already Givón 1982). With reference to Southeast Asia, Bisang (1996; 1998) regards the sharing of grammaticalization pathways among languages as the key factor behind the emergence of areal linguistic similarities and so as a key approach in what has become known as “areal typology”: the study of the typological features that are shared by geographically contiguous

Overall, the discussion of contact-induced grammaticalization addresses several issues, among them the speaker’s motivation to engage in acts of linguistic innovation, and constraints on the directionality of the process. In Matras (1994: 67, 241–3; 1998b) it was suggested that bilingual speakers benefit from being able to syncretize the mental planning operations applied while interacting in each of the languages. This allows effective exploitation of the full linguistic repertoire, on the one hand, while still complying with the constraints of context-appropriate selection of overt word forms, on the other. In order to achieve this, bilinguals exploit the meanings and functions of inherited structures and enhance them to carry out organization procedures that are replicated from the model language.

Haase (1991) similarly notes that bilingual speakers are motivated to avail themselves of the expressive means of both their languages and thus wish to have equal constructions at their disposal in each language, but they can only do so if they are able to identify parallel items in the two languages as translation equivalents. This means that the grammaticalization process begins by matching lexemes to one another and adapting the range of meanings expressed by the lexemes of the replica language to those expressed by the parallel lexemes in the model. The basis for the matching procedure is the polysemy of the word in the model: Usually the model word has both a concrete meaning, and a more abstract one. Consider for instance the English word up, and its “concrete” spatial-locational meaning, alongside the counterpart expression in shut up, where up takes on the function of an abstract modifier. The process of grammaticalization therefore proceeds along a hierarchical scale from more concrete, lexical meanings to the more abstract, grammatical functions (cf. Nau 1995: 175–6; Haase 1991: 169), a property that has been referred to as the “unidirectionality” of the grammaticalization process (cf. Haspelmath 1999).

Heine and Kuteva (2003; 2005) base their model of contact-induced grammaticalization on the notion of a mental comparison between a model and a replica language, as a result of which a construction is identified in the replica with the potential to carry the same meaning as the target construction in the model. The candidate construction is then grammaticalized in order to take on the meaning conveyed in the model. The concrete changes may involve expansion of a construction from minor to major use patterns including an increase in frequency, extension of its distributional context, extension across categories, and the emergence of new categories. The unidirectionality of grammaticalization is manifested in the emergence of novel meanings, semantic bleaching or blurring of existing meanings as lexemes take on more abstract grammatical functions, loss of morphosyntactic properties that are associated primarily with the content lexeme (as in the case of nouns that are grammaticalized into location expressions, or interrogatives that are used as subordinators), and possibly also through an erosion or reduction of phonetic substance.
2.3 Pattern replication and pivot matching

Replication of patterns might be viewed as a kind of compromise strategy that allows speakers to continue to flag language loyalty through a more or less rigid choice of word forms, and at the same time to reduce the load on the selection mechanism of linguistic structures by allowing patterns to converge, thus maximizing the efficiency of speech production in a bilingual situation. Consider example (1), from a German native speaker who is giving an interview for British television:

(1)  a. At the border in England, were by the custom/
   b. They have investigated this car very very eh/ eh/ thoroughly and they
      have removed the panels from the doors, the panels from the luggage room,
   c. and they in/ investigated in the engine compartments aber they didn’t
      find anything,
   d. but the/ they have forgotten to got unten/ the/ [clears throat] they
      forgot to look under the car.

As an indication of the speaker’s proficiency in English, note his use of some rather elaborate vocabulary, such as the words investigated, removed, thoroughly, or compartments. He also speaks fast, and in well-constructed sentences. But notice nevertheless how his native German influences his English speech. In line (a) the speaker follows German word order rules on the positioning of the finite verb (were) in second constituent position, following the prepositional phrase at the border in England. This verb is also used lexically in a way that resembles German, to express existence, whereas the normal English equivalent would have been there were. Following German usage, the speaker prefers the perfect tense to express past-tense events, whereas in English the more obvious choice for events that have no direct bearing on the present situation is the simple past: they have investigated, they have removed (b), they have forgotten (d). The speaker refers to the boot of the car as the luggage room (b), constructing the expression following the German model: Kofferraum, where -raum (similar to English room) actually means ‘space’.

These idiosyncratic structures are normally perceived as cases of “interference” or “negative transfer” from the speaker’s native language. In fact, they constitute instances of the speaker availing himself simultaneously of components from both subsets of his repertoire: generalizing certain word order patterns, tense-aspect categories, and word-formation patterns across the various contexts of interaction, while selecting context-appropriate word forms (in most cases, with the exception of German aber ‘but’ in line c). These combinations are creative usages that enable the speaker to communicate even in the absence of full grammatical competence in English. While in this particular case they are unlikely to lead to language change, they are of precisely the same nature as those processes which, repeated and accepted by a collective of speakers and propagated across a speech community over a period of time, may indeed lead to contact-induced change.
The following example from a German–English bilingual child demonstrates the same mechanism at work again:

(2) German; age 6:0, addressing both parents, commenting on their conversation (which is conducted in German):
   Was redet ihr über?
   what talk.2PL you.PL about
   ‘What are you talking about?’
   German: Worüber/über was redet ihr?

The child’s construction in (2) is an import of the English preposition stranding construction, but note that English does not, in fact, provide the full blueprint for the sentence. Rather, the use of German tense and question-phrase word order is correct, deviating from that of English. The construction is thus a blend, a hybrid: The speaker makes use of a key feature of the English model construction, while at the same time adapting it to German by complying with various rules of German morphosyntax, as well as using exclusively German word forms in overall compliance with the expectations of the ongoing interaction context (a conversation in German among the interlocutors).

A model is therefore required that can explain convergence in light of two additional properties (cf. Matras & Sakel 2007). First, the tendency of pattern replication from the model to comply not just with the norms on selection of replica-language word form, but also with other morphosyntactic constraints of the replica language. And second, the potential occurrence of pattern replication as a spontaneous production, and not just at the end of a gradual process of context- or meaning-extension as predicted by grammaticalization theory. In addition, a model of convergence must also be able to account for potential exceptions to the unidirectionality of grammaticalization, such as the loss of categories (e.g. the loss of the definite article in Romani dialects in contact with languages like Russian and Polish).

Figure 3.1 depicts the stages in the process of “pivot-matching,” which offers an alternative model of convergence. The point of departure is the speaker’s aim to pursue a particular communicative goal, embedded into a particular communicative context. This is transposed into a concrete linguistic task for which an appropriate task-schema (see Green 1998) needs to be assembled from within the linguistic repertoire. Scanning through the entire repertoire, the speaker identifies a construction that would serve this particular task most effectively. We assume that, when scanning the repertoire, the speaker has the entire repertoire at his or her disposal, and does not “block” or “de-activate” any particular language “system.” But the speaker is also conscious of the need to meet certain expectations of the interlocutor in respect of the choice of word forms.

We assume that the optimal construction that was identified does not have an established structural representation that is appropriate for the present context. The speaker therefore tries to optimize communicative efficiency by combining the selected construction with context-appropriate word forms. In order to do this, the
speaker de-constructs the construction by isolating its pivotal features, such as the preposition-stranding feature in example (2). This construction “pivot” is then matched to the inventory of context-appropriate forms. This inventory includes not just word forms, but also their formation and combination rules, leading the speaker in (2) to employ German tense and word-order rules. The outcome is a creative, innovative construction that is both task-effective and, seemingly at least, context-appropriate.

Such creativity has the potential of increasing and enriching the inventory of constructions that speakers have at their disposal in a given set of interaction contexts – i.e. in a given “language.” But there is also the risk of misjudging the acceptability of new constructions to interlocutors. Interlocutors’ reactions are therefore crucial to the chances of a new construction to be genuinely effective, to be accepted, to be used by the speaker again, and to be replicated by others and so eventually lead to language change. Innovations introduced by single second-language learners are unlikely to be propagated, while in a situation of collective language learning, especially one where speakers have limited access to the target language, such as pidginization processes, innovations are more likely to prevail. Similarly, lax normative control by a parental generation or community institutions, e.g. in situations of creole formation, among immigrant communities, or among some multicultural communities with open and flexible attitudes toward community boundaries and identity, is more likely to allow spontaneous innovations by speakers to be received favorably and possibly propagated to result in change. This – lax normative attitudes in a multilingual community with flexible identity boundaries – is the likely scenario behind the emergence of many of the world’s so-called “linguistic areas.”
3 Convergence and Typological Change

Convergence (pattern replication) of the kind described above can lead to a wholesale re-adjustment of the morphosyntactic patterns of a language in a given domain of grammar and so to a shift in type, or typological drift. In Matras (1994) I described how Romani adopted clause-combining strategies that were common in Byzantine Greek and other contact languages in the Balkan area, at the expense of what will have been its New Indo-Aryan legacy of (co-relative and nominal) constructions. The emergence of a uniform type of complementation in contiguous languages via a process of pattern replication can be illustrated both for Romani and for another language of the Balkans, the dialect of Turkish as spoken in Macedonia:

(3) a. Macedonian Turkish:
   (o)  
   3SG  want.3SG  go-3SG.SUBJ
   
   b. Macedonian:
   \[toj\]  \[sak-a\]  \[da\]  \[id-e\]  
   3SG  want-3SG  COMP  go-3SG
   
   c. Romani (Balkans):
   \[ov\]  \[mang-el-a\]  \[te\]  \[dża-l\]  
   3SG.M want-3SG-IND COMP go-3SG.SUBJ
   
   d. Greek:
   \[(aftós)\]  \[thel-i\]  \[na\]  \[pa-i\]  
   3SG  want-3SG  COMP go-3SG
   'He wants to go.'

Macedonian Turkish replicates the Macedonian model construction, replacing the inherited Turkish infinitive and postposed modal verb (\(git-mek\) \(istiyor\)) by a finite, postposed complement clause. Note however that the Macedonian and the Macedonian Turkish constructions are not isomorphic: Macedonian makes use of a subjunctive complementizer to introduce the nonfactual complement clause, while the finite verb shows no distinction for mood. The Macedonian Turkish construction is based on the subjunctive (historical optative) inflection of the verb, with no complementizer. The "pivotal" feature that is replicated is thus the order of constituent clauses – a main matrix clause followed by a complement clause – and the subjunctive marking of the complement clause. The means of achieving this marking are language specific, and draw on language-specific resources and constraints. The historical change involves an extension of the meaning and environment of the historical, semantically conditioned optative, to serve as a syntactically conditioned subjunctive. Romani (3c) generally replicates the Greek construction, itself a close parallel to the Macedonian one. It introduces a subjunctive complementizer by drawing on an inherited correlative particle *\(te\) (cf. Hindi \(to\)), exploiting it in a function that matches that of the Greek subjunctive complementizer \(na\). We thus
witness the emergence of a linguistic area through a kind of chain development or series of independent language-internal grammaticalization processes, each triggered by contact among distinct pairs of languages.

Some convergence developments involve much more subtle shifts in the mapping of form and meaning. Khuzistani Arabic undergoes a reanalysis of the morphology of its attributive construction – involving both nouns as attributes (genitive construction), and adjectives (see Matras & Shabibi 2007). In Arabic, adjectival attributes follow the head noun and agree with the head noun in gender, number, as well as in definiteness (4a). Nominal attributes, by contrast, are conjoined by means of the attributive īḍāfa-construction, whereby only the dependent (genitive) noun is overtly marked for definiteness (4b):

(4) Standard Arabic (and other dialects):
   a. ʿl-walad ʿl-kabīr
       DEF-boy DEF-big.M
       ‘The big boy’
   b. ʿwalad ʿl-mudīr
       boy DEF-director
       ‘The director’s son’

In Persian, both types of attributes are treated in the same way: the attribute (whether adjectival or nominal) follows the head, and an attributive particle mediates between the two:

(5) Persian:
   a. ʿpesar-ʿe ʿbozorg
      boy-ATT big
      ‘The big boy’
   b. ʿpesar-ʿe ʿmodīr
      boy-ATT director
      ‘The director’s son’

The pattern in Khuzistani Arabic matches the Persian arrangement (note that, as in other dialects of Arabic, the definite article ʿl- assimilates to dental consonants, resulting in gemination of that consonant):

(6) Khuzistani Arabic:
   a. ʿwalad ʿl-ʿibīr
      boy DEF-big.M
      ‘The big boy’
   b. ʿwalad ʿl-몬dīr
      boy DEF-director
      ‘The director’s son’

The key to understanding the change is the function and the position of the definite article in the nominal attribution in Arabic (4b), which resembles the function and
Table 3.1  Layout of the present-tense finite verb in languages of East Anatolia

<table>
<thead>
<tr>
<th>Language</th>
<th>Aspect</th>
<th>Root</th>
<th>Person</th>
<th>Aspect</th>
<th>Root</th>
<th>Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turoyo Aramaic</td>
<td>ko-</td>
<td>-doz-</td>
<td>eno/ono</td>
<td>ø</td>
<td>-doz-</td>
<td>eno/ono</td>
</tr>
<tr>
<td>Kurmanji Kurdish</td>
<td>di-</td>
<td>-bîn-</td>
<td>-im</td>
<td>ø/bî-</td>
<td>-bîn-</td>
<td>-im</td>
</tr>
<tr>
<td>Persian</td>
<td>mî-</td>
<td>-bîn-</td>
<td>-êm</td>
<td>(ô)/be-</td>
<td>-bîn-</td>
<td>-êm</td>
</tr>
<tr>
<td>Western Armenian</td>
<td>gô-</td>
<td>-desn-</td>
<td>-êm</td>
<td>ø</td>
<td>-desn-</td>
<td>-êm</td>
</tr>
<tr>
<td>Levantine Arabic</td>
<td>b-a-</td>
<td>-šûf-</td>
<td>[zero]</td>
<td>ø-a-</td>
<td>-šûf-</td>
<td>[zero]</td>
</tr>
</tbody>
</table>


the position of the attributive particle in nominative attributions in Persian. The Persian attributive particle is interpreted as the pivot of the Persian attributive construction, both nominal and adjectival. The Arabic definite article becomes associated with the Persian attributive particle due to the similarities in their structures in nominal attributions. It is then extended to match the Persian attributive particle in the adjectival attribution, resulting in a loss of the Arabic definiteness agreement in adjectival attributions and in a shift in meaning of the definite article itself. The conflation of the two constructions is, once again, an interesting challenge to the unidirectionality hypothesis in grammaticalization theory, which normally predicts that extension (of meaning or of distribution context) will lead to the emergence of new categories and more differentiation will emerge.

Convergence can affect inflectional paradigms, too. In the case of the linguistic area of eastern Anatolia, contact has led to shared grammaticalization pathways in the development of aspect/mood prefixes. The languages involved – Persian, Kurdish, Armenian, Neo-Aramaic, and Levantine Arabic – all have a progressive-indicative aspectual prefix, usually derived from a preposition indicating location or similarity. The subjunctive is marked either by the absence of the progressive-indicative prefix, or by a specialized subjunctive prefix (Table 3.1).

A further pathway for morphological convergence is through reanalysis and leveling of functions within the paradigm of the replica language. Fertek Greek from the Cappadocian region in central Anatolia adopts the Turkish agglutinative arrangement of case markers, drawing on its own inherited system of morphemes (Dawkins 1916: 113–14). While Greek has a declension-sensitive inflectional system, and a single morpheme may integrate several meanings/functions (e.g. GEN.SG.F.), Fertek Greek moves toward an agglutinating type in reducing the meanings of each morpheme: Thus -yu (originally M.SG.GEN) marks exclusively the genitive, independently of gender and number, like Turkish -m in the model. It can be combined with other markers of singularity or plurality into a layered case structure, as in the Turkish model (Table 3.2).

These few examples illustrate the potential of pattern replication to bring about major changes in the morphosyntactic typology of a language – from the
Table 3.2  Genitive case marking in Fertek Greek (based on Dawkins 1916)

<table>
<thead>
<tr>
<th></th>
<th>Greek</th>
<th>Fertek Greek</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td>'wife'</td>
<td>yinék-a</td>
<td>nék-a</td>
<td>kadın</td>
</tr>
<tr>
<td>'wives'</td>
<td>yinék-es</td>
<td>nék-es</td>
<td>kadın-lar</td>
</tr>
<tr>
<td>'of the wife'</td>
<td>yinék-as</td>
<td>nék-a-yu</td>
<td>kadın-m</td>
</tr>
<tr>
<td>'of the wives'</td>
<td>yinék-on</td>
<td>nék-es-yu</td>
<td>kadın-lar-m</td>
</tr>
</tbody>
</table>

level of representation of just a single construction such as attribution, to the principles of clause combining, tense-aspect representation, and the representation of nominal case. In a sense, the potential impact of convergence of this kind is even "deeper" or more far-reaching than that of matter replication or the borrowing of overt shapes of morphs and word forms: Items such as bound tense-aspect markers and case affixes are very rarely borrowed directly from one language to another, nor are definite articles frequent candidates for direct (matter) replication. Of course, structures such as word order or the blueprint for clause combining are by their very nature only replicable as patterns. Arguably, pattern replication is more far-reaching in its potential because speakers are able to reconcile a radical and thorough shift in the way meanings are mapped onto forms and in the way word forms are organized at the phrase and sentence level, and morphemes are organized at the word level, with holding on to an inventory of word forms that are representative of their community language and so of their identity. As stated in the opening remarks, convergence offers speakers the opportunity to accommodate and generalize and yet still hold on to a mental demarcation between subsets of word forms within their repertoire. This, the compromise between form-structure continuity and organizational adaptation, is what makes almost each and every structure of language potentially vulnerable to convergence in situations of contact and multilingualism.

4  Typology and Generalizations on Contact-Induced Change

4.1 Types of generalizations

In this final section I examine the typology of borrowing (matter replication), and attempt to generalize, predict, and assess the universality of borrowing. Much of the discussion on borrowing has chosen to focus on constraints (cf. Moravcsik 1978) and in turn the opportunities to demonstrate counter-examples to proposed constraints and so render proposed generalizations invalid (cf. Campbell 1993). I am concerned here not with the postulation of absolute predictions concerning which structures can or cannot be borrowed; it is firstly an empirical fact that
examples, however isolated, of borrowings have been cited for almost each and every type of grammatical morpheme. Moreover, the postulation of a negative ("no X can ever be borrowed") carries with it obvious epistemological risks.

Rather, I am concerned with an assessment of empirical data that show some clear tendencies in the area of borrowing, tendencies that merit our attention and justify a number of generalizations. These generalizations, in turn, demand an explanatory account, one that at the very least supplies a reasonable hypothesis as to why the borrowing behavior of certain functional categories should differ, more often than not, from that of others (all other conditions being equal). The empirical data on which the discussion will draw includes recent sampling in contact linguistics, which has shed new light on insights which previously had been based largely on chance observation.

4.2 Structural properties that favor borrowing

Early interest in structural borrowing within linguistic typology focused on the hierarchical relationship among structures in respect of ease of borrowing. Under "ease" of borrowing we understand the likelihood of a structure type to be borrowed. This likelihood can be measured in two ways. First, by the frequency with which a structure is found to be borrowed in a sample of case studies of structural borrowing. Until recently, most measures of frequency had been based on casual observations rather than on strict sampling; nevertheless, there is often tacit agreement about which structures are more frequently found to be borrowed. The other measure is the duration and intensity of contact that is required, in relative terms, to license the borrowing of a particular structure (by comparison to others). Thomason and Kaufman's (1988) frequently cited borrowing scale operates on the basis of this kind of observation. It lists various structural categories in groups that are more and less likely to be borrowed, indicating both relative frequency of cases of borrowing, and the hypothesized relative time depth of contact needed for borrowing. On that particular scale, the rather vague category of "function words," for example, figures higher (i.e. more "borrowable") than for example "word order":

(7) Thomason and Kaufman's (1988) borrowing scale

| Casual contact | Category 1: content words |
| Category 2: function words, minor phonological features, lexical semantic features |
| Category 3: adpositions, derivational suffixes, phonemes |
| Category 4: word order, distinctive features in phonology, inflectional morphology |
| Category 5: significant typological disruption, phonetic changes |

Another way of measuring "ease" of borrowing is by examining the frequency of borrowed items by category in a particular corpus, based on a particular case study:
(8) Haugen (1950: 224), on Norwegian and Swedish immigrant speech in the US: nouns > verbs > adjectives > adverbs, prepositions, interjections

(9) Muysken (1981), on Spanish in Quechua (repeated by Winford 2003: 51): nouns > adjectives > verbs > prepositions > coordinating conjunctions > quantifiers > determiners > free pronouns > clitic pronouns > subordinating conjunctions

The obvious difficulties with such an approach are keeping apart the particular conditions for borrowing, and the natural occurrence frequency of a category in a corpus, as well as possible structural constraints or even sociocultural factors that may be unique to the individual case study.

An alternative approach to category borrowability is the attempt to identify structural factors that facilitate borrowing. Pioneered by Moravcsik (1978), the context of this approach is the study of universals of language, their structural manifestations, and the functionality that governs them. Moravcsik follows, to some extent, Weinreich’s (1953: 35) prediction that tight integration of a morpheme will limit its borrowability, but goes beyond that to identify semantic autonomy as a factor favoring borrowability. Lexical items are thus more borrowable than non-lexical items, nouns are more borrowable than non-nouns, free morphemes more than bound morphemes, and derivational morphology more than inflectional morphology. Both Johanson (2002) and Field (2002) revisit these tendencies and conclude that semantic transparency and a consistent form–meaning relationship facilitate borrowing. Field (2002) proposes the following hierarchy:

(10) content item > function word > agglutinating affix > fusional affix

Once again, the hierarchical arrangement represents both quantity (more content items are borrowed than function words, and so forth), and temporality (content items are borrowed earlier in the history of contact than function words, and so forth). The observed structural constraint is considered to some extent to be self-explanatory: Items that convey transparent meaning are more easily acquired. Their consistent meaning allows them to be replicated in different structural environments and in different interaction contexts. And it is also reflected in their structural autonomy, which facilitates their integration into another language. The question that is not asked in this connection is what motivates borrowing in the first place. Rather, it is taken for granted that the motivation for borrowing is extra-linguistic, in that speakers feel pressure to demonstrate competence in a prestige language, or else that it is internal to language, in the sense that speakers generalize certain vocabulary items across their repertoire for the sake of convenience, irrespective of the function of these vocabulary items, as long as there are no structural obstacles that stand in the way of their integration into the recipient language. Absence of transparency and absence of structural autonomy are considered potential obstacles that inhibit borrowing.
4.3 Implicational hierarchies and motivations for borrowing

While the hierarchies formulated by both Moravcsik (1978) and by Field (2002) are presented in the forms of implicational hierarchies, they do not explicitly set out the preconditions that are met at a higher position in the hierarchy and which enable borrowing at a lower position. In other words, the theme of the hierarchy is one that is regarded as facilitating, not as motivating borrowing. Agglutinative morphs are thus simply more likely to be borrowed than fusional morphs since they satisfy the conditions that facilitate borrowing more strongly and more consistently, but the borrowing of agglutinating morphs does not constitute a prerequisite for the borrowing of fusional morphs. Moreover, the facilitating conditions themselves do not, as I pointed out earlier, explain the motivation for borrowing.

A different kind of approach to implicational hierarchies of borrowing isolates individual values of a single category – or paradigmatic values – for comparison in respect of their borrowing behavior. Already Stolz (1996) identifies a correlation between different function words that are borrowed from Spanish into Central American and Pacific languages:

(11) Implications for the borrowing of Spanish function words in Central American and Oceanic languages (Stolz 1996):
   a. If a language has borrowed *porque* ‘because’, then it will always have borrowed *pero* ‘but’.
   b. If a language has borrowed more than two function words [from Spanish], then *pero* ‘but’ is among them.

But the category of “function words” remains a vague one, based largely on structural criteria, and no common denominator can be isolated to account for the findings that are presented in Stolz’s study. When the data are re-examined, however, and attention is given to values of consistent semantic-pragmatic categories, a pattern emerges that is confirmed from other contact situations as well. In Matras (1998a) I examined a sample consisting of (a) various dialects of Romani in contact with different languages (such as French, Hungarian, Romanian, Turkish, and Greek); (b) a sample of languages under the historical sphere of influence of Arabic, either directly or mediated via other languages such as Turkish or Persian (including Hausa, Swahili, Kurdish, Neo-Aramaic, Turkish, Lezgian, Macedonian, Persian, Urdu, and more); and (c) Stolz and Stolz’s (1996) sample of some 40 Central American languages in contact with Spanish. For the set of coordinating conjunctions, all samples showed the following implicational borrowing hierarchy, i.e. the item on the right is only borrowed if item on the left is also borrowed:

(12) but > or > and
Since we are dealing here with values of the same word class and the same functional sub-category, namely coordinating conjunctions, it is possible to reduce the opposition between the values to a single semantic-pragmatic feature, namely the expression of “contrast.” On this basis we can postulate a link between the expression of contrast and the likelihood of borrowing; we can thus isolate the semantic-pragmatics of contrast as a factor motivating borrowing. Why should contrast act as a driving factor for borrowing? The explanation offered in Matras (1998a) for the high susceptibility of contrast to borrowing is the interaction-level tension surrounding the act of contradicting a shared presupposition. It is hypothesized that this tension puts a strain on the speaker’s processing of language, which may in turn interfere with the selection and inhibition mechanism (cf. Green 1998) that controls the retrieval of “language-correct” items from the bilingual repertoire. This may result in a malfunction of the selection and inhibition mechanism and the production of a functionally correct item – a contrastive conjunction – but in the “wrong language” (a form that is not context-appropriate). Evidence in support of this hypothesis has been presented in the form of a corpus of bilingual speech-production errors of this kind, which tend to target connectors and discourse markers in general, and expressions of contrast in particular (see Matras 2000; 2007a).

Now, not all speech production errors (“interference” or “transfers”) have the potential to lead to language change. But we must treat them as in some ways similar to the spontaneous innovations by individual bilingual speakers that were discussed above. Although they are not “strategic,” but in a sense “counter-strategic” and quite often subject to immediate self-repair by bilingual speakers, under certain circumstances errors of this kind may remain unnoticed, unrepaird, and uncorrected by the speaker and interlocutor. This might occur in situations where there is full acceptance of bilingualism, lax normative pressure to conform with a particular image of “correct” language, and tolerance toward word forms from the particular donor language in question. Romani provides a good example, since it is always spoken in a community of bilinguals, it is never the dominant language of public life, and although language loyalty is important in many communities, it is often projected onto a rather modest set of basic vocabulary items and their inflection, which serve as adequate tokens of ethnic-linguistic separateness. Infiltration of connectors and other word forms, lexical and grammatical, from the surrounding languages is thus widely tolerated. Central American languages are similarly useful instances, since Spanish dominates as the language of public life, urban life, education, and economic activity, and its infiltration into the indigenous ethnic languages is taken for granted.

In these kinds of situations there is fertile ground not just for the acceptability of speech production errors as appropriate, but also for their propagation. The generalization of one form at the expense of the corresponding form or structure of the recipient language constitutes a kind of compromise in the management of the bilingual repertoire. It allows the speaker, on the one hand, to simplify control and management of the bilingual repertoire by reducing the effort needed to retrieve the correct structure around processing functions that are likely to place
a strain on the selection mechanism. On the other hand, by limiting such “fusion” of subsets within the repertoire to just a limited number of semantic-pragmatic functions, the speaker is retaining the overall principle of context-appropriate selection of structures – or “language differentiation” – within the repertoire (for a more elaborate discussion see Matras 2009, ch. 4).

Thus, by isolating the semantic-pragmatic feature that characterizes the borrowability cline for paradigm values of a single functional category, we are able to extract insights into the factors that motivate borrowing – in this case, the expression of contrast – and to offer a hypothesis about the genesis of the borrowing process. The very same principle can be applied to a series of category value sets, as carried out by Elšík and Matras (2006) for a sample of some 75 Romani dialects, and by Matras (2007b) for a cross-linguistic sample based on reports for some 30 case studies. Both investigations confirm a correlation between borrowability and the semantics of elements that convey relative vulnerability of the speaker’s assertive authority, as in the case of contrast (which is likely to be received hesitantly by the listener). This underscores the hypothesis of a correlation between a higher strain on the speaker’s processing effort in the interaction (in pursuit of the listener’s attention and trust), and weaker control of the selection and inhibition mechanism that is responsible for context-appropriate choices of structures and items within the multilingual linguistic repertoire. The data discussed in these studies confirm, for example, the higher susceptibility to borrowing of modality (insecure knowledge), of obligation (external force), condition (non-real event), purpose and factuality (weak semantic integration of an event presented as one whole), cause (justification attempt), the superlative (a marked contradiction to a presupposed set), and indefinites (absence of clear identification of the referent):

(13) Further borrowing hierarchies (Elšík & Matras 2006; Matras 2007b):
    a. modality > aspect/aktionsart > future tense > (other tenses)
    b. obligation > necessity > possibility > ability > desire
    c. concessive, conditional, causal, purpose > other subordinators
    d. factual complementizers > nonfactual complementizers
    e. superlative > comparative > (positive)
    f. indefinites > interrogatives > (other) deixis, anaphora

Also high on the borrowing hierarchy are items that convey the speaker’s monitoring and directing of the interaction – discourse markers, fillers, tags, interjections, focus particles – control over which is subject more to automatized routine rather than to reflection and intent, and which on these grounds also easily escape the speaker’s control over the selection and inhibition mechanism.

Finally, another type of motivation can be extracted from empirically attested borrowing hierarchies. Once again, the relevant studies are the corpus of Romani dialects discussed in Elšík and Matras (2006), and the cross-linguistic sample of case studies discussed in Matras (2007b). The relevant theme here is the elimination of the need to select among language alternatives – in other words,
structural “fusion” within the repertoire for a particular category – around items that can be closely related to activities that are more likely to be performed in the donor language. In essence, we are talking about speakers generalizing a routine which they perform more regularly in one of their languages, for use across the linguistic repertoire, irrespective of interaction context and choice of language. By contrast, on the opposite end of the cline we find items that are relatively resilient and are “protected” from borrowing through their association with a routine that is normally performed in the recipient language:

(14) Context-bound, routine-based hierarchies:
   a. unique referents > general/core vocabulary
   b. nouns > non-nouns
   c. numerals in formal contexts > numerals in informal contexts
   d. higher cardinal numerals > lower cardinal numerals
   e. days of week > times of day
   f. peripheral local relations > core local relations
   g. remote kin > close kin

I use the term “unique referents” to capture the value of names of institutions, customs, and other activity routines that are associated with a specific sociocultural setting. The association with a specific routine prompts the bilingual speaker to activate those associations whenever mention is made of the referent, and so to maintain its original form rather than attempt a translation or paraphrased rendering. A similar principle applies to names for culture- or environment-specific objects, artifacts, instruments, flora and fauna, and so on; this provides a function-oriented explanation for the greater borrowability of nouns over non-nouns. Numerals are borrowed more often in formal contexts – for example when citing dates or commercial quantities, or in connection with commercial transactions – where they are associated with the language of the institutional domain and commerce. Among cardinal numerals, higher figures tend to be borrowed before lower figures, the latter being protected by the routine of everyday counting in the recipient language, the former being more typical of institutional settings (school, trade, administration, and so on). Terms for days of the week are more readily associated with the language of the public domain than times of day, which are again part of everyday routines. Finally, complex local relations (such as “against,” “opposite,” “around”) and more remote kin (e.g. “uncle,” “grandparent”) are more prone to be substituted by public domain speech routines, while their more basic and proximate counterparts – local relations such as “on,” “in,” or close kin such as “daughter,” “father” – are protected by the language of everyday household routines.

5 Conclusion

Our discussion of both convergence (pattern replication) and borrowing (matter replication) has shown that filling “gaps” in the replica or recipient language is
not a primary motivation for contact-induced language change, save perhaps in the adoption of lexical labels for new artifacts and concepts. It certainly does not explain the motivation for change in grammatical structure. Nor is the prestige of the model or donor language a motivation for change, but at most an extra-linguistic condition that enables change. Structural features of linguistic constructions and categories may facilitate borrowing, but the fact that clear trends can be identified in samples that cross the boundaries of various linguistic types indicates that the overall structural composition of both the donor and the recipient language are secondary factors in facilitating or impeding borrowing. The same can be claimed for different combinations of cultures; while some cultural features may support or prevent borrowing, general trends from cross-linguistic samples confirm that the impact of culture-specific conditions is secondary.

The fact that borrowing hierarchies can be postulated for a range of categories and category domains, irrespective of the typology of the languages involved and of culture-specific factors, indicates that there are universals of borrowing, and justifies a universalist approach to borrowing. But what are the implications of a universalist approach, and what are the dimensions and parameters within which it can be pursued? It was suggested above that the universal factor that plays a crucial role in triggering contact-induced change is the language-processing mechanism, and the challenge facing the bilingual speaker to manage context-sensitive selection of structures and items within a complex repertoire of linguistic structures. Bilingual speakers pursue a limited range of strategies in order to facilitate management of the bilingual repertoire, among them the creation of new constructions (combining a model from one language with word forms from another), and the generalization of just a single set of forms for a particular category (or fusion) across the repertoire. The conditions under which the latter process takes place can be read from the pattern of borrowing hierarchies, which allows us to hypothesize a connection between likelihood of borrowing and (a) the effort that is required to successfully manage vulnerable points in the discourse interaction, and consequent loss of control over the selection and inhibition mechanism, as well as (b) the association of particular linguistic tasks with routines, and the generalization of those associations across the repertoire.

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The Handbook of Language Contact

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