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Bilingualism-induced Language Change: What can Change, When and Why?

Abstract: Contact between languages has become increasingly recognized as a major source of historical change, as linguistic properties are introduced from one language into another. Numerous case studies document changes that have resulted from contact. And yet, contact does not necessarily lead to such changes. In fact, arguably most of the contrasting properties that could potentially appear in one language under the influence of another spoken at a given place and time do not actually appear. This paper argues that historical and contact linguistics should now look more systematically at different kinds of bilingualism rather than contact *per se* and incorporate recent sociolinguistic and psycholinguistic findings about different types of bilingualism from this literature. These can help us understand when change occurs and, equally importantly, when it does not. In the present context we build on the general model of bilingualism, CASP (short for "Complex Adaptive System Principles") proposed by Filipović (2019) and Filipović & Hawkins (2019), and explore its predictions for whether and when changes will be made in the grammatical conventions of one or the other language of a bilingual. In the event that the relevant speech community comprises monolinguals in addition to bilinguals these changes may then spread to the wider community if social and demographic circumstances favor this. This paper focuses on the ultimate source of these so-called linguistic borrowings or transfers, within and across bilingual minds, and gives illustrative data supporting CASP's predictions for changes in both language usage and grammar among bilinguals.

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1 Introduction

Language contact has become increasingly recognized as a source of historical language change, as linguistic properties are borrowed from one language into another (Weinreich 1953, Thomason 2001, Harris & Campbell 1995, Campbell 2004). We now have many examples of different changes in languages that have resulted from contact between speakers of different languages (cf. the handbook of Darqueness et al., eds., 2019 for extensive examples and details).

But contact does not necessarily lead to such borrowings. In fact, most of the contrasting properties that distinguish one language from another at any given time are arguably not borrowed (in contact/historical linguistics terms) or transferred (in SLA literature terms) in contact situations. And there has been much less, often no, systematic attention given in the literature to when contact does *not* lead to change. Nor have these contact case studies been sufficiently linked to general research findings and theories in the bilingualism literature covering both sociolinguistic and psycholinguistic aspects that might explain why certain changes occur, or alternatively do not occur. And nor have these in turn been sufficiently linked to more general factors that impact change involving synchronic universals and general diachronic patterns and laws.

In this paper we propose that historical and contact studies need to

(i) look more systematically at bilingualism rather than contact *per se*;

(ii) incorporate recent sociolinguistic and psycholinguistic findings about different types of bilingualism that can help us understand when change occurs; and

(iii) pay attention to cases where contact has *not* led to change, instead of focusing almost exclusively on when it *has* happened.

To this end we draw on the integrated socio- and psycholinguistic model of bilingualism developed in Filipović (2019) and Filipović & Hawkins (2019), referred to as "**CASP**" (short for "Complex Adaptive System Principles"). This model is built on general principles of communicative and processing efficiency, as advocated in recent psycholinguistic models e.g. Gibson et al. (2019) and in linguistic models of efficiency in grammars (Hawkins 2004, 2014). The five key principles of the CASP for Bilingualism model are: **Minimize Learning Effort** ("master shared properties between the two languages first"), **Minimize Processing Effort** ("make use of simple properties rather

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than complex ones whenever possible"), **Maximize Expressive Power** ("master complex properties when this is needed in order to express all meanings in both languages"), **Maximize Efficiency in Communication** ("use complex properties only when simple ones are not enough for the purpose"), and **Maximize Common Ground** ("use the same outputs in both languages, if available, or create them if not available", see (1) below). These principles sometimes cooperate and sometimes compete depending on the specific profiles of the bilingual speakers (characterized by e.g., age of acquisition, proficiency and dominance) and on the specific features of communicative situations (i.e., who the bilingual is talking to, other bilinguals or monolinguals; see Filipović 2019: 56-60 for details and examples of the linguistic phenomena in question). These principles help us understand when and why bilingualism leads to language change in one or the other language of the bilingual. These changes may then eventually spread to the wider speech community comprising monolinguals, in the event that some members of the relevant speech community are not bilingual, and if social and demographic circumstances favor this[1].

The principle in focus for the purpose of this paper is **Maximize Common Ground** (MCG), which is the only bilingual-specific principle in CASP. The other efficiency principles are shared with monolingual learning and usage. All of CASP's principles work together and can be seen to be operating together in language change. For example, Minimize Learning Effort and Minimize Processing Effort lead to simplifications in language over time, such as the loss of inflections (as in Old English). On the other hand, they may be opposed by Maximize Efficiency in Communication and Maximize Expressive Power, whereby languages become more complex when speakers develop more means to express certain meanings or draw more sublte meaning distinctions (e.g. in the grammaticalization of present progressive forms *I am walking* vs *I walk*). These processes may or may not be related to, or triggered by, bilingualism. On one account the loss of English inflections as well as numerous other changes were the result of English-Norse bilingualism in the Danelaw (Emonds & Faarlund 2014). **Maximize Common Ground** applies to, and makes predictions for, such changes when bilingualism is the main or one of the main causal factors.

Applying the CASP model we show when and why bilingualism can or will lead to language change in one or the other language of the bilingual, when and why it is unlikely to do so, and when it will not do so. In section 2 we define **Maximize Common Ground** (MCG), and summarize illustrative data supporting its three component predictions for changes that are implemented in usage and/or grammar in one or the other language of a bilingual. Section 3 enumerates the constraints on these changes, of both

1 See Trudgill (2011, 2020) for a detailed summary of of the relevant social and demographic factors and their interactions with language learning and bilingualism.

a sociolinguistic and psycholinguistic nature, either blocking or enhancing the relevant changes, depending on the many different social or psychological variables that are at play within the complex adaptive system of two languages in the bilingual mind. And section 4 refers briefly to further filters on these MCG predictions stemming from language universals and general constraints on successive diachronic states of a language across generations as documented in historical linguistics. Section 5 concludes.

2 Bilingualism and Efficiency: The CASP Model

One of the main goals of Filipović & Hawkins' (2019) model is to account for the many cases observed in the bilingualism literature of properties from one language being adopted in the other, in both performance and grammatical conventions. Conversely, it seeks to understand when this sharing *does not happen*. A full review of the bilingualism literature is given in Filipović's (2019) monograph, *Bilingualism in Action: Theory and Practice*, in which the different efficiency principles of the CASP model summarized above are developed and defined, and their interactions exemplified.

2.1 Maximize Common Ground (MCG)

The bilingualism literature tells us that one language of a bilingual regularly influences the other in some way, resulting in what Filipović (2019) calls "common ground" between them. Extensive examples of this are given in Filipović (op.cit.) and in other bilingualism models and texts such as Muysken (2000), Myers-Scotton (2003), De Groot (2011), Pavlenko (2011, 2014), Silva-Corvalán (2014), among others, and in monographs focusing specifically on borrowing in relation to different types of bilingualism, such as Field (2002) and Trudgill (2011). This principle also underlies the process known as *transfer* in second language acquisition, and according to Filipović & Hawkins (2013, 2019) both positive and negative transfers are actually driven by the same processing mechanism of MCG but result in different outputs due to external individual and situational factors (see section 3 below). The CASP model captures this in the MCG principle defined in (1), which interacts with, and is constrained by, the

other efficiency principles of CASP listed above (Filipović 2019: 56-60), and further constrained by universal and general diachronic principles (see section 4).[2]

(1) **Maximize Common Ground** (MCG, Filipović 2019: 60)
Bilingual learners and speakers maximize common grammatical and lexical representations and their associated processing mechanisms in their two languages, L1a and L1b.

Filipović & Hawkins (2019) argue that this common ground so-defined makes language processing and storage more efficient in the bilingual mind, it makes bilinguals "language-ready" for both systems, and it reduces processing effort in the "thinking for speaking" strategies more generally (i.e. in on-line cognitive processing when language is actively used, see Slobin 2016 for discussion of these strategies). It is also supported by the parallel activation neuro-cognitive model of bilingualism in Costa (2019) and Blanco-Elorrieta & Caramazza (2021), which provides a neurolinguistic rationale for the psycholinguistic principles of Slobin (op.cit.) and Filipović & Hawkins (op.cit.). Specifically, MCG makes three general predictions for borrowing and transfer among the two languages of a bilingual, summarized in (2) (Filipović 2019: 60; Filipović & Hawkins op.cit.):

(2) a. If L1a and L1b share a given construction, grammatical rule or word meaning, and associated processing mechanisms, then these shared entities will be used more frequently in both languages. These entities may be the preferred or majority pattern in one language and a minority or dispreferred one in the other, but they will still be the pattern of choice in the bilingual's use of both languages, though to different degrees, depending on the type of bilingualism and types of interactional situations, see section 3 below.

b. If L1a and L1b do not share a given construction, grammatical rule or word meaning, and associated processing mechanisms, then common ground will be created by either introducing entities and rules from one language into the other, or removing them from both. New shared entities will be introduced wherever possible within the constraints of current grammatical and usage conventions for the relevant language.

c. Violations of a grammatical or usage convention in L1a or L1b that occur when maximizing common ground (i.e. systematic changes in grammar or usage conventions) will be in proportion to the strength of the social (environmental and contextual) and individual (psycholinguistic) factors enu-

2 Note that "Common Ground" is used here to refer to the shared grammatical and lexical properties of two languages, as opposed to the usage of this term in the pragmatics literature where it refers to mutual information shared by speaker and hearer in a discourse, cf. e.g. Clark (1996).

merated in Filipović (2019) and Filipović & Hawkins (2019), see again section 3.

2.2 Illustrative Data Supporting MCG and Its Predictions

The bilingualism literature is replete with data that test, and support, the MCG principle defined in (1) and its predictions listed in (2).

For example, with respect to (2a) involving partial overlaps a minority word order in one language, e.g. adjective before noun (AdjN), coexisting with a majority noun before adjective (NAdj) as in French and Spanish, will gain in frequency when speakers of these languages are in bilingual contact with a language that has only AdjN, like English (cf. Nicoladis 2006 for French & English bilinguals, Cuza & Pérez-Tattam 2016 for Spanish & English). Similarly, a pro-drop language in bilingual contact with a non-pro-drop language like English which requires obligatory subjects, will increase the occurrence of its overt subjects (cf. Myers-Scotton 2003 for increased subjects in the Spanish of Spanish & English bilinguals, Schmitt 2000 for Russian & English bilinguals, Savić 1995 for Serbian & English, Polinsky 1995 for Polish, Tamil, Kabardian & English, and Fenyvesi 1994 for Hungarian & English). And a *wh*-in-situ language like Cantonese in bilingual contact with a language having both *wh*-fronting and *wh*-in-situ like English (cf. *What did you buy*? and *You bought what*?) will result in more *wh*-in-situ in English usage by bilinguals (Yip & Matthews 2007). The extent to which these outcomes will occur is modulated by internal and external factors, namely speaker profile and communicative situation profile. For example, in a single language condition (monolingual mode; Grosjean 2001; see section 3.2) more proficient balanced bilinguals will maximize common ground less (and with fewer negative transfers) than less proficient bilinguals, and all bilinguals are expected to maximize common ground more in dual language conditions (i.e. speaking to two monolinguals at the same time, one in each language; Green & Abutalebi 2013) than in single language conditions (i.e. speaking to just one monolingual; see Filipović 2019 for a detailed discussion and examples). Depending on the language pair and the grammatical area in question, expanding the minority pattern in one language (e.g. AdjN) to match the majority pattern in the other may result either in fewer free choices or in actual changes in the grammatical or lexical conventions of this language in the event that NAdj was required and AdjN was not permitted.

An example relevant for cases of non-overlap in (2b) involves evidentiality, i.e. the grammatical expression of the speaker's source of information for the proposition being expressed, whether as direct and witnessed or instead more indirect, second-hand or hearsay (Aikhenvald 2004). Turkish is a language with obligatory grammatical marking of evidentiality, and this can lead either to a) the more frequent expression of

constructions with evidential content in languages like English that do not grammaticalize evidentiality (*it appears that* …, *I am informed that* …, etc.) among English and Turkish bilinguals, i.e. through optional grammatical and lexical means that remain within the grammatical constraints of English, or it can lead to b) the loss of habitual evidential distinctions in Turkish and adoption of default (evidentiality-neutral) past tense marking in both languages (Arslan, Bastiaanse & Felser 2015; Tosun & Filipović 2022). The different conditions that motivate these two outcomes are discussed further in section 3.1. These changes involving evidentiality between two languages may occur without actually changing any grammatical conventions, therefore, though they do change pragmatic (usage) conventions (see Slobin 2016 and Tosun & Filipović 2022 for Turkish & English; see also Heine & Kuteva 2005 and Aikhenvald 2002 for Tariana & Portuguese in this connection) and they may also involve changes in grammar in the event that grammaticalized evidentiality distinctions are lost.

Examples of (2c), in which grammatical conventions are systematically changed when maximizing common ground, include word order and even the basic head ordering typology of languages in bilingual contact with one another. This has been documented across the globe, with productive shifts going in both directions from head-initial to head-final and from head-final to head-initial, reflecting largely sociolinguistic, demographic and political relations between speakers of the two languages (see section 3.1).

The following often quite radical restructurings (even "metatypic" changes, cf. Ross 2007) exemplify changes to one language in bilingual contact with another that *have* taken place in well-defined regions and under sociolinguistic and psycholinguistic conditions that clearly *did* result in language transfers. In (3) we summarize some well-documented cases of VO to OV shifts that were accompanied by cross-categorial shifts to head-final head ordering within other phrasal categories such as adpositional phrases (prepositions yielding to postpositions), noun phrases (noun before adjective and genitive becoming adjective and genitive before noun), etc.[3]

(3) **VO → OV** in **Amharic** and other Semitic languages under bilingual influence from **Cushitic** languages in Ethiopia (Appleyard 2015);
Austronesian languages in coastal New Guinea, e.g. VO **Takia** shifting to OV under the influence of Papuan **Waskia** (Ross 1996);
Yaqui (Southern Uto-Aztecan now with SOV and head-finality) through contact with SOV Hokan and Northern Uto-Aztecan languages (Lindenfeld 1973);
Sri Lanka **Malay** and Sri Lanka **Portuguese** originally SVO creoles, now rigid SOV under Dravidian influence (Bakker 2000, Heine & Kuteva 2005).

3 See Hawkins (1983) for general discussion of the cross-categorial ordering universals in typology that these changes conform to.

In (4) we give examples of the reverse OV to VO shifts, i.e. head-final to head-initial:

(4) **OV** → **VO** in Uto-Aztecan **Nahuatl** through contact and bilingualism with neighboring VO Mesoamerican languages (Gast 2007);
Papuan **Kuot** (of New Ireland) from Papuan OV to VSO and consistent head-initial orders, surrounded by head-initial Austronesian languages (Lindström 2002);
Pipil (Uto-Aztecan) originally OV which was changed to VO through bilingual contact with Mayan languages (Campbell 1985);
Eskimo varieties (OV) in bilingual contact with English (Fortescue 1993).

These quite radical head ordering shifts were clearly made in violation of the current head ordering conventions in the changing language, at the time they were made, and among the bilinguals who first implemented the changes. This raises the related question: when does borrowing of such linguistic properties in violation of current conventions in the relevant language, i.e. borrowings leading to language change, not actually occur, and why not? Sections 3 and 4 summarize some of the major constraints on such changes occurring in bilingual situations that have been observed across the globe.

3 Sociolinguistic and Psycholinguistic Constraints on MCG in Bilingualism

3.1 Sociolinguistic Constraints

There are many factors of an ultimately social nature that can either limit or enhance the extent to which properties of one language are introduced into another among bilingual speakers. For example, we can expect generally less MCG in formal interactions than in informal ones (Dewaele 2001), and also less MCG when a bilingual is talking to a monolingual rather than to another bilingual, or to two monolinguals in the two languages (Filipović 2019). Most importantly, there is less MCG when the feature that might be transferred is found in the socially less prestigious, less dominant and less numerous language (cf. Trudgill 2011 for detailed exemplification of these different social possibilities and their relevance for transfer and change in numerous language pairs).

For example, returning to evidentiality, whether a grammaticalized evidentiality morpheme and morpho-syntax are transferred by MCG from an L1a (which has them) into an L1b (which does not) depends on whether L1a is the socially more dominant and prestigious language and on population demographics. Evidentiality was introduced

into the language of the governed population, Bulgarian, under the influence of the language of the governing population, Turkish, during Ottoman rule (Slobin 2016), but not into the more highly esteemed Greek, which retained a special status despite the same Ottoman rule and consequent exposure to the language of the administrative rulers, Turkish (Lindstedt 2016). This is a clear example of a change not taking place among certain bilinguals (Greek & Turkish) in response to social conditions that were crucially different from those that held among other bilingual populations (Bulgarian & Turkish).

Conversely, evidentiality was adopted into socially prestigious Andean Spanish from Quechua and Aymara, despite political subjugation, but through sheer strength of numbers of the bilingual speakers using evidentiality in their L1s (Aikhenvald 2002, 2004; Slobin 2016; Filipović 2019). Specifically, evidentiality was adopted from Quechua into Spanish spoken as an L2 by the Quechua people because of the bilingual profiles of the speakers (Quechua as L1) and their social environment (they were located in Quechua majority communities). By contrast, evidentiality is predicted by our model to decline if the demographically dominant language lacks evidentiality, which is the case with Turkish and English bilinguals in New York (Tosun & Filipović 2022). In other words, it is these social variables that crucially determine whether a property will appear in one language under the influence of another, and if it does, the direction of such influence among the languages in question.

More generally, these social variables may or may not expand the common ground between different languages by either introducing, or not, new linguistic properties. These sociolinguistic constraints on MCG among bilinguals reveal similar social dynamics and outcomes to those seen in other linguistic areas and in social interaction generally (cf. Filipović 2019 for further discussion). They can be seen as a form of "communication accommodation" between speaker and hearer, as discussed in social psychology and social identity theory (cf. Giles & Smith 1979 for details). In the same vein "alignment" research within the phonetic sciences has observed that they have an important influence on the way speakers adjust the fine phonetic details of their pronunciations to their hearers (and even to the voice-AI systems of recent technologies, cf. Zellou, Cohn & Kline 2021 and Zellou, Cohn & Segedin 2021). The sociolinguistic constraints on MCG among bilinguals reveal similar social dynamics and outcomes to those seen in these other linguistic areas and in social interaction generally (cf. Filipović 2019 for further discussion).

3.2 Psycholinguistic Constraints

Psycholinguistic constraints primarily involve the balanced or unbalanced nature of the bilingualism situation in question and comprise both a processing basis and a learn-

ing basis. With respect to processing, research on syntactic priming (i.e. the copying of structural choices among interlocutors when the grammar of the relevant language permits alternatives) has shown that this can occur both within and across the two languages of a bilingual (Hartsuiker et al. 2016; Hatzidaki et al. 2011). It results in a possible preference for the selection of one structure over another (e.g. a passive over an active) across two languages, and hence for a common preference in actual usage across the two languages. The constraints on this common preference, i.e. whether it will actually occur or not, appear to reflect, on the one hand, the degree of structural overlap between the two languages. For example, passives in German and English do not prime one another, because of the different positions of the passive verb in these two languages (Loebell & Bock 2003), whereas passives in Spanish and English do prime each other (Hartsuiker et al. 2016), since these two languages have similar passive verb positions. On the other hand, the more balanced the language command of a bilingual is, the more syntactic priming there appears to be across their two languages.The less balanced, the more constrained the cross-linguistic priming will be (see Filipović 2019: 41-45 for a review of the literature). Another factor of relevance to processing is what Grosjean (2001) calls "language mode", i.e. the state of activation of the bilingual's language and language processing mechanisms. If both languages are activated simultaneously, then more common ground will be made. If just one is activated, there will be less.

The balanced/unbalanced distinction is also directly relevant for language learning and strongly impacts the amount of language transfer. For example, in very unbalanced bilingualism involving L2 learners, common ground between L1 and L2 is regularly created through both positive (i.e. grammatical) and negative (ungrammatical) transfer of L1 features into L2. Definite and indefinite article omission errors by Russian and Japanese learners of English reflect levels of proficiency These "errors" are progressively reduced as proficiency improves, resulting in less MCG between L1 and L2 and separate and correct conventions for the two languages (Hawkins & Filipović 2012, Filipović & Hawkins 2013). Depending on the structural properties in question there may be fewer errors, and thus less incorrect common ground created between L1 and L2, for example when there are significant differences between two languages as in Japanese versus English head ordering in syntax (OV vs. VO). In the Cambridge Learner Corpus of Hawkins & Filipović (2013) there were no recorded instances of Japanese learners converting head-initial phrases of the type [*went* [*to* [*the cinema*]]] into head-final [[[*the cinema*] *to*] *went*] in their L2 English, even at the earliest stages of L2 acquisition. Similarly, the head-final structures of Japanese are mastered early and readily by English learners of L2 Japanese (Rutherford 1983).

It is argued in Filipović & Hawkins (2013) that there is a "communicative blocking" of this kind of erroneous usage, since it would impede comprehension, whereas less extreme word order errors by Spanish learners of English are not blocked (e.g.

**I read yesterday the book*, where the verb-object bond is interrupted by the adverb *yesterday*, a structure which is readily permitted in Spanish but not in English). The radical head ordering changes summarized in (3) and (4) above are quite remarkable in the light of these L2 data from Japanese and English, which show no errorful common ground. The shifts listed under (3) and (4) are explained in Filipović & Hawkins (2019) as a consequence of strong social pressure in favor of MCG between the two languages, and of a form of bilingualism that is both long-standing and widespread (cf. Ross 2007 and Trudgill 2011) and also more balanced. All of these factores favor the introduction of more complex features from one into the other language of the bilingual. This will initially result in errorful output but these outputs do not appear to impede communication within and across generations, and this ultimately leads to a gradual changing of grammatical conventions and to MCG over time in the languages of the bilingual (cf. again Trudgill op.cit.).

Notice that the so-called "negative transfer" characteristic of L2 learning, which Trudgill (op.cit.) sees as including many simplifications in morphology and phonology (these are the principal areas he discusses), can also lead to changes in grammatical conventions in the wider speech community that uses the L2, in the event that there are sufficiently large numbers of L2 learners present. So, he attributes the extensive inflectional simplifications and levelings in the morphology of mainland Scandinavian languages during the protracted period of the Hanseatic League to the presence of extremely numerous adult Low German speakers north of the Baltic, who would have been bilingual with e.g. Norwegian, but more as an L2 than an L1. A similar argument has been made for many more languages by Bentz & Winter (2013), who show that languages with more second language learners tend to lose nominal case. For many further details on these kinds of psycholinguistic constraints on MCG and their impact on one or the other language of the bilingual, and possible spread beyond bilinguals to the wider speech community comprising monolinguals as well, see Filipović (2019).

The CASP model can also help us understand how and why different age groups of bilinguals may contribute to language change differently. For instance, the language production of bilinguals will vary depending on whether they acquired both languages as L1s or whether one is more dominant (L1) than the other (L2). Further, the social environment and geographical location in which they acquired their languages will also play a role in the predicted outcomes and consequences for language change, e.g. whether they are heritage language learners or early or late second language learners, see Montrul (2015), Polinsky (2018), Tosun & Filipović (2022). Trudgill (2011) reports that child language (balanced) bilingualism tends to lead to complexification of languages while adult (unbalanced) bilingualism leads to simplification of the weaker (L2) language (see also Filipović 2019 for further detail on this point). Notice finally in this section that less MCG can be expected to occur in "code-switching" (Poplack 1980) and "code-mixing" (Muysken 2000) situations, whereby each language retains

its essential grammatical properties in the mix and despite the direct insertion of elements from one into the other language.

4 Universal and Diachronic Laws Constrain MCG Further

Whenever there is an implicational universal (Greenberg 1963) or a hierarchy of such implications there will be a set of constraints on MCG transfers, in accordance with the permitted co-occurrences. Consider Keenan & Comrie's (1977) Accessibility Hierarchy for Relative Clause Formation (SU > DO > IO/OBL > GEN), or any such hierarchy (A > B > C > D). They define a chain of overlapping implications, if D then C, if C then B, and if B then A, and (all and only) the following co-occurrences:

A
A + B
A + B + C
A + B + C + D

If the two languages of a bilingual are at different points on this hierarchy, e.g. one has A, the other (A + B + C +) D, then MCG will be attained either by gaining or by losing properties, depending on the sociolinguistic and psycholinguistic factors that determine dominance and direction of transfer, as we have seen. But universal co-occurrences must always be respected in the process and in the interlanguages (e.g. the language with A alone cannot acquire C before B in the event that both languages converge on D).

The sequencing of changes that takes place when grammatical conventions of a language are altered is further constrained by gradualness: it is a fundamental principle of historical linguistics that you cannot change everything at once without jeopardizing communication between generations. For example, when L1a and L1b (or L1 and L2 if proficiency is unbalanced) are of quite different word order types, as in (3) and (4), some orders will change before others, in accordance with the attested typological patterns (Hawkins 1983, 2014: 85-89).

There is a further factor that determines the sequencing of any borrowings from one language to another under MCG (2c), in addition to implicational universal constraints and the gradualness of historical changes. This involves what we can call the "ease of innovation" for certain linguistic features over others. The basic insight and empirical generalization here is exemplified by degrees of borrowability and the "borrowability hierarchies" in historical linguistics (Weinreich 1953, Moravcsik 1978, Harris &

Campbell 1995). For example, lexical items are borrowed more readily than grammatical function words; within the former, nouns more readily than verbs; free-standing (grammatical) words are easier to innovate and borrow than morphological affixes; and derivational affixes more readily than inflectional affixes.

5 Conclusions

There is mounting evidence that certain types of bilingualism have played a significant role in changing the grammatical conventions of one or the other language in the bilingual mind. This can then lead to language change in monolingual communities as well under the appropriate social and demographic circumstances. In order to clarify the relationship further between bilingualism and change we must incorporate a general model of, and research findings about, bilingualism and consider how the principles of this model interact with universal and general diachronic laws. We must also look more systematically at cases where contact has *not* led to change.

CASP and its component principles, especially **Maximize Common Ground** (section 2), provide such a model. Bilingualism and language change both involve complex adaptive systems of multiple interacting factors, social, psychological and linguistic, all of which must be considered together, if we are to reach clarity on when bilingualism does and does not induce language change at a given point in time. The CASP model presented here is a first step in this direction and it offers a platform for further investigations along these lines and for explaining what can change, when and why.

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