

Generative grammar and language mixing¹

Terje Lohndal

Norwegian University of Science and Technology

The paper by Benmamoun, Montrul and Polinsky (henceforth, BMP) clearly outlines the importance and relevance of heritage languages for linguistic theory. They make the point that “[...] additional perspectives and sources of data can also provide new critical evidence for our understanding of language structure”. I completely agree with this. My goal in this brief essay will be to attempt to situate the BMP paper in a somewhat broader theoretical context. In that sense, what follows is much more of an extension than a critique of their paper.

1. Some history

BMP correctly point out that the monolingual speaker has been given primacy in the history of theoretical linguistics. An important locus for this priority can be found in the early pages of *Aspects of the Theory of Syntax*.

“Linguistic theory is concerned primarily with an ideal speaker-listener, in a completely homogeneous speech-community, who knows its language perfectly and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic) in applying his knowledge of the language in actual performance” (Chomsky 1965: 3).

Put differently, there is no variation, no errors. When a speaker of the language is asked whether sentence X or Y is well-formed, the answer will not be influenced by the fact that the speaker might know two other languages as well. Clearly this is an idealization that simply cannot be correct, but it has been retained because it made it easier to construct theories of complex empirical phenomena.

It is worth pausing to reflect on this assumption. Here is another rationale for why it makes sense to focus on the monolingual, this time from an interview with Chomsky conducted by François Grosjean in the mid 1980's:

“Why do chemists study H₂O and not the stuff that you get out of the Charles River? [...] You assume that anything as complicated as what is in the Charles River will only be understandable, if at all, on the basis of discovery of the fundamental principles that determine the nature of all matter, and those you have to learn about by studying pure cases” (Cook and Newson 2007: 222).

¹ Thanks to Artemis Alexiadou and Elly van Gelderen for helpful comments on this essay.

In essence, then, anything but a monolingual speaker is argued to be too complicated as an object of study. When attempting to discover the underlying principles of the faculty of language, we need to study “pure cases” to ensure that what we discover has not been affected by other factors.

Much has happened since 1965. Today a multilingual perspective is increasingly the norm in linguistics. In addition to their native tongue, most speakers know at least one other language. Non-formal approaches to the study of language are keenly aware of this, and they have unraveled a lot of important data and generalizations, which have also come to play an important role in language instruction and our understanding of the effects of knowing one or more languages for language learning in general.

Within theoretical linguistics, however, multilingualism has not been the norm. There has been some work uncovering formal constraints on language mixing² (Sankoff and Poplack 1981, Woolford 1983; Di Sciullo, Muysken and Singh 1986; Belazi, Rubin and Toribio 1994, MacSwan 1999, 2000, 2005, Muysken 2000, Myers Scotton 2002, van Gelderen and MacSwan 2008, Áfarli and Subbārão 2013), but in general, the field at large has not devoted much attention to this area. Much more work has been done on second language acquisition (see Hawkins 2001, White 2003, and Herschensohn and Young-Scholten 2013 for an comprehensive overview), where generative theories have been used to analyze the data since the late 1980’s. Other work includes Roeper (1999) who argues for a certain kind of universal bilingualism within every language (see also Cook and Newson 2007), and Kroch (2001) argues for competing grammars in the context of language change. BMP contributes to this literature by their paper, extending the domain to heritage languages as well and drawing on independent work by the three scholars (see references in their original paper).³

Despite the focus on the monolingual speaker in theoretical linguistics, I agree with BMP that there is a lot to learn from looking at other more complex situations. In the next section, I will elaborate on this claim.

2. The importance of multilingual speakers

I believe the approach taken in Chomsky (1965) was a correct approach at the time. It made sense to start investigating the tacit competence of a native speaker on the assumption that the native speaker only masters one language. Given the vast number of theoretical and empirical questions that had to be addressed, the task would have been made much more difficult if more complex situations had been taken as the point of departure.

² I use language mixing, which includes code-switching, to describe a situation where a speaker produces linguistic outcomes constituted by a mixture of elements from two or more languages (see Gumperz (1982) among others).

³ See also Putnam and Salmons (2013) for a recent study of heritage German from a theoretical perspective.

However, a lot of progress has been made since 1965 (see Freidin and Vergnaud 2001, Freidin and Lasnik 2011, Freidin 2012, Lasnik and Lohndal 2013 for discussion of the historical development of generative grammar). Today we know a lot about the basic operations (see Hornstein and Pietroski 2008, Hornstein 2009 for discussion of this term) of the language faculty. Government and Binding (Chomsky 1981 and a lot of work in the 1980's) was instrumental in establishing a framework for comparative syntax, and in doing so, it basically uncovered a "body of doctrine" in the sense of a set of generalizations that appear to be more or less true. In the past 20 years, the focus has been on rationalizing these generalizations by providing more principled explanations for them (cf. references above). Therefore, one can argue that our understanding of the faculty of language has reached a stage where it is possible to move further to more complex situations, as BMP also briefly mentions.

Returning to the water metaphor cited in the previous section, Cook and Newson (2007: 224) argue that "[...] water is a molecule, H₂O, not an atom; if we break it into its constituent hydrogen and oxygen, we are no longer studying water. Purifying the mind into a single language means destroying the actual substance we are studying – the knowledge of language in the human mind". Thus they are arguing that we need to look at the actual, more complex situations that most speakers encounter.

The core questions for most linguists are the following.

- (1) a. What constitutes knowledge of language?
- b. How is knowledge of language acquired?
- c. How is knowledge of language put to use?

(Chomsky 1986: 3)

A lot of generative work has focused on the first two questions, arguing for an innate biological capacity to acquire human languages. However, there are certain issues that a focus on monolingual speakers will not address. BMP mention questions such as "[...] what exactly is the role of input in the development and maintenance of a language during childhood and into adulthood? When language acquisition takes place under reduced input conditions or under pressure from another language in a bilingual environment, which areas of grammar are resilient and which ones are vulnerable? What underlies the common simplification patterns observed among different heritage languages?" BMP do a great job of illuminating how exactly research on heritage languages can provide at least partial answers to these questions.

Chomsky (1986) argues that the object of inquiry should be I-language, that is, our individual, internal and intensional tacit knowledge of language. From that perspective, it is important to study speakers who master multiple languages to varying degrees. They will provide crucial information about a central question in theoretical linguistics, namely what a possible human I-language is. This includes identifying the boundaries of I-language, often through studying instances of poverty of stimulus. BMP also point at an important distinction between areas of the grammar that require significant input and use in order to be immune from attrition, and "areas

of the grammar which are naturally resilient even without extensive input and use”. Such questions cannot be raised unless scholars look at multilingual environments, and it is clear that a complete theory of I-language will need to capture this distinction that BMP emphasize. The distinction, if true, shows how work on heritage languages and other instances of multilingualism can provide evidence which in turn can illuminate our theories of the faculty of language. For example, why is it the case that certain areas are so resilient whereas other areas are malleable and subject to change throughout the life of a speaker? Is it because resilient areas are part of Universal Grammar or because of some other property? Future work will hopefully tell us more about this.

3. Theoretical issues in language mixing

BMP show a number of cases where data from heritage languages bear on theoretical questions. In several cases, I think the theoretical implications are somewhat more significant than BMP make them sound. In the interest of future work, I want to discuss a couple of examples where I think BMP’s work has far-reaching consequences.

One example in section 3 of BMP’s paper involves the distinction between lexical and functional categories. They argue that in general, “functional categories are relatively more vulnerable than lexical categories, although there is significant variation among the latter as well”. In a sense, this is not so surprising, since many scholars identify the functional domain with language variation (Borer 1984, Chomsky 1995). Various scholars have also put forward theories of the acquisition of functional phrases where they are acquired based on input, and Hawkins (2001) also shows that bilingual speakers first produce the lexical argument structure domain of a sentence, and then proceed to build additional structure based on evidence in the input. Heritage speakers illustrate the loss of functional structure, and this raises the question of what goes missing and how that happens. Are functional structures such that they require ‘maintenance’ in order to be preserved, so that with too little input, they start to disappear? Or are the features on functional heads somehow different in nature from features on lexical heads? These are interesting questions that the work discussed in BMP raises. Other work by Tsimpli et al. (2004) argues that in first language attrition, semantic features are vulnerable whereas syntactic features stay intact. The results in BMP point in the direction of syntactic features being vulnerable as well, which may be a difference between attrition in heritage speakers and the kind of attrition discussed by Tsimpli et al.

More generally, functional structure has come to play a pivotal role in syntactic research. Recent work on the syntax of argument structure shows how functional structure is crucially part of the argument structure domain as well. Since Harley (1995) and Kratzer (1996), many scholars have argued that the Agent is introduced by a dedicated functional projection (VoiceP or vP) (Alexiadou et al. 2006). Since then, other work has argued that all arguments are introduced by dedicated projections (Borer 2005, Bowers 2010, Lohndal in press). Such dedicated projections serve to introduce argument structure templates (or frames, as in Åfarli

2007). They typically have specific meanings attached to them. However, they are different from functional structure introduced above the Agent (following the standard assumption that the Agent is introduced after all other arguments have been introduced), where functional structure does not introduce any arguments. Rather, they introduce scope operators (such as negation) and there may be dedicated projections as landing sites for movement related to focus, topic, *wh*-movement and so on and so forth (see e.g., Rizzi 1997 for discussion from a syntactic point of view). If true, then it complicates the traditional distinction between lexical and functional categories, especially in the sense that lexical projections are introduced prior to functional projections.

The dissociation between the argument structure domain of a sentence and the rest of the sentence provides a starting point for understanding other instances of language mixing. In particular, in one common variety of language mixing, one language seems to provide the lexical content morphemes whereas another language tends to provide the inflectional morphemes. An example from the famous Haugen (1953) is provided in (2), where Norwegian and American English are mixed even within words (assuming with Myers Scotton 2002 that this is not a case of borrowing).

- (2) Så **play**-de dom **game**-r
 then play-PAST they game-PL
 ‘Then, they played games’

In (2), there are content morphemes from English, but the inflectional morphemes are drawn from Norwegian. Thus there is a clear separation between the two domains. In this sense, heritage languages appear to be similar to other cases of language mixing. A more systematic comparison may uncover further similarities, and probably a few differences. For example, in (2), the first language of the speaker is Norwegian, and the functional structure comes from that language. This is different from heritage speakers since attrition most commonly affects functional structure, as discussed above. Data such as (2) (and there are plenty of similar instances attested in the literature, cf. e.g., Muysken 2000) support the dissociation between lexical and functional structure, but they also show that we need to distinguish between different kinds of language mixing and attrition. Future work will hopefully be able to explore this further.

Another example I want to focus on relates to the following statement in BMP:

“Syntactic knowledge, particularly the knowledge of phrase structure and word order, appears to be more resilient to incomplete acquisition under reduced input conditions than inflectional morphology is. There is a tendency for heritage language speakers to retain the basic, perhaps universal, core structural properties of their language.”

I would argue that this shows that we need a clear dissociation between the structural properties (frames or templates in Åfarli/Borer) and the morphological properties.

Distributed Morphology is a theory that has incorporated this with their notion of ‘late insertion’ (see e.g., Embick and Noyer 2006). In this theory, abstract syntactic structures are generated and morphological structure is inserted after the syntactic computation proper has been finished. BMP does not comment on this similarity, but the tendency in heritage languages supports a theory that distinguishes structures from their morphological realization. The question, then, is how exactly this should be implemented in a formal theory applied to heritage languages and language mixing more generally. Space prevents me from discussing this further here, but see Áfarli (2013) for a suggestion.

An issue that BMP does not explicitly discuss involves the nature of theories of multilingualism. Scholars such as Myers-Scotton (1993, 2002) argue that theories of syntactic code-switching needs to assume special machinery in order to account for the relevant data. That is, the theory we have for monolinguals is not adequate and additional assumptions are required to account for bilingual and multilingual phenomena. On the other hand, MacSwan (1999, 2000, 2005) argue that we should have the same theory of the language faculty regardless of whether the speaker is monolingual or multilingual. Áfarli (2013) supports MacSwan’s argument and goes on to develop an I-language theory that accommodates the data discussed by Myers-Scotton without making special assumptions about the grammar of multilingual speakers.⁴

I believe a tacit assumption in BMP is that a theory of the grammar of heritage languages should not look different from a theory of a monolingual speaker of a language. That is, the syntactic model that one uses for the monolingual speaker should be identical to one used for the multilingual speaker. Of course, this is not to say that there are no differences between heritage speakers and other speakers. For example, BMP point at four factors that are important in shaping heritage grammars: differences in attainment, attrition over the lifespan, transfer from the dominant language, and incipient changes in parental/community input that get amplified in the heritage variety (their section 5). These differences do not entail that, say, the theory of syntax for heritage speakers require fundamentally different or additional assumptions than do the theory of syntax for a monolingual speaker. However, a more pressing question relates to how attrition over the lifespan should be captured. BMP do not assume that these are performance effects, rather they seem to view them as real competence effects, witnessed e.g., through the reduced ability of heritage speakers to make acceptability judgments that are similar to monolingual controls (see BMP’s paper for more discussion). What exactly is it that goes missing or how are certain aspects of their grammatical knowledge re-analyzed into a new system? Ideally, we would like a syntactic theory that could capture these effects in a straightforward way. Such a theory does not exist at present, which underscores BMP’s claim that heritage languages indeed do have a lot to offer theoretical linguistics.

⁴ See also González-Vilbazo and Lopéz (2011) for some discussion of Myers-Scotton’s theoretical perspective.

4. Concluding remarks

BMP make a convincing case that heritage languages can illuminate our theories of the faculty of language. In this brief commentary, I have attempted to justify why theoretical linguistics should take multilingual phenomena into account when constructing theories of grammar. I have also discussed some questions that BMP raise in their article, which I believe should play an important role in theoretical linguistics in the years to come.

References

- Åfarli, T.A. 2007. Do Verbs have Argument Structure? *Argument Structure*, Eric Reuland, Tanmoy Bhattacharya & Giorgos Spathas (eds.), 1-16. Amsterdam: John Benjamins.
- Åfarli, Tor A. 2013. A Syntactic Frame Model for the Analysis of Code-Switching Phenomena. Ms., Norwegian University of Science and Technology.
- Åfarli, Tor A., and K. V. Subbārāo. 2013. Models for language contact: the Dakkhini challenge. Paper presented at Formal Approaches to South Asian Languages, University of Southern California, March 9-10.
- Alexiadou, Artemis, Elena Anagnostopoulou, and Florian Schäfer. 2006. The properties of anticausatives crosslinguistically. *Phases of Interpretation*, Mara Frascarelli (ed.), 187-212. Berlin: Mouton de Gruyter.
- Belazi, Hedi M., Edward J. Rubin and Almeida Jacqueline Toribio. 1994. Code Switching and X-Bar Theory. *Linguistic Inquiry* 25: 221-237.
- Borer, Hagit. 1984. *Parametric Syntax*. Dordrecht: Foris.
- Borer, Hagit. 2005. *Structuring Sense* (vols. I & II). Oxford: Oxford University Press.
- Bowers, John. *Arguments as Relations*. 2010. Cambridge, MA: MIT Press.
- Chomsky, Noam. 1965. *Aspects of the Theory of Syntax*. Cambridge, MA: The MIT Press.
- Chomsky, Noam. 1986. *Knowledge of Language: Its Nature, Origin, and Use*. New York: Praeger.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: The MIT Press.
- Cook, V.J. and Mark Newson. 2007. *Chomsky's Universal Grammar: An Introduction*. Third edition. Malden: Blackwell.
- Di Sciullo, Anne-Marie, Pieter Muysken and Rajendra Singh. 1986. Government and Code-Mixing. *Journal of Linguistics* 22: 1-24.
- Embick, David and Rolf Noyer. 2006. Distributed Morphology and the syntax morphology interface. *The Oxford Handbook of Linguistic Interfaces*, Gillian Ramchand and Charles Reiss (eds.), 289-324. Oxford: Oxford University Press.
- Freidin, Robert. 2012. A brief history of generative grammar. In *The Routledge Companion to Philosophy of Language*, Gillian Russell and Delia Graff Fara (eds.), 895-916. London: Routledge.
- Freidin, Robert and Howard Lasnik. 2011. Some Roots of Minimalism. In *The Oxford*

- Handbook of Linguistic Minimalism*, Cedric Boeckx (ed.), 1-26. Oxford: Oxford University Press.
- Freidin, Robert and Jean-Roger Vergnaud. 2001. Exquisite Connections: Some Remarks on the Evolution of Linguistic Theory. *Lingua* 111: 639-666.
- van Gelderen, Elly and Jeff MacSwan. 2008. Interface conditions and code-switching: Pronouns, lexical DPs, and checking theory. *Lingua* 118: 765-776.
- González-Vilbazo, Kay and Luis López. 2011. Some properties of light verbs in code-switching. *Lingua* 121: 832-850.
- Gumperz, John. 1982. *Discourse Strategies*. Cambridge: Cambridge University Press.
- Harley, Heidi. 1995. Subjects, Events, and Licensing. PhD dissertation, MIT.
- Haugen, Einar. 1953. *The Norwegian Language in America*. Philadelphia: University of Philadelphia Press.
- Hawkins, Roger. 2001. *Second Language Syntax*. Malden: Blackwell.
- Herschensohn, Julia and Martha Young-Scholten (red.). 2013. *The Cambridge Handbook of Second Language Acquisition*. Cambridge: Cambridge University Press.
- Hornstein, Norbert. 2009. *A Theory of Syntax*. Cambridge: Cambridge University Press.
- Hornstein, Norbert and Paul Pietroski. 2008. Basic Operations. *Catalan Journal of Linguistics* 8: 113-139.
- Kratzer, Angelika. 1996. Severing the External Argument from the Verb. *Phrase Structure and the Lexicon*, Johan Rooryck and Laurie Zaring (eds.), 109-137. Dordrecht: Kluwer.
- Kroch, Anthony S. 2001. Syntactic Change. In *The Handbook of Contemporary Syntactic Theory*, Mark Baltin and Chris Collins (eds.), 699-729. Malden: Blackwell.
- Lasnik, Howard and Terje Lohndal. 2013. Brief overview of the history of generative grammar. *The Cambridge Handbook of Generative Syntax*, Marcel den Dikken (ed.), 26-60. Cambridge: Cambridge University Press.
- Lohndal, Terje. In press. *Phrase structure and argument structure: A case study of the syntax-semantics interface*. Oxford: Oxford University Press.
- MacSwan, Jeff. 1999. *A minimalist approach to intra-sentential code-switching*. New York: Garland.
- MacSwan, Jeff. 2000. The architecture of the bilingual faculty: evidence from intrasentential code switching. *Bilingualism* 3: 37-54.
- MacSwan, J. 2005. Codeswitching and generative grammar: A critique of the MLF model and some remarks on «modified minimalism». *Bilingualism: Language and Cognition* 8: 1-22.
- Muysken, Pieter. 2000. *Bilingual Speech. A Typology of Code-Mixing*. Cambridge: Cambridge University Press.
- Myers-Scotton, Carol. 1993. *Duelling Languages: Grammatical Structure in CodeSwitching*. Oxford: Oxford University Press.
- Myers-Scotton, Carol. 2002. *Contact Linguistics: Bilingual Encounters and Grammatical Outcomes*. Oxford: Oxford University Press.

- Putnam, Michael T. and Joseph Salmons. 2013. Losing their (passive) voice: Syntactic neutralization in heritage German. *Linguistic Approaches to Bilingualism* 3: 233-252.
- Rizzi, Luigi. 1997. The fine structure of the left periphery. *Elements of Grammar*, Liliane Haegeman (ed.), 281-337. Dordrecht: Kluwer.
- Roeper, Thomas. 1999. Universal bilingualism. *Bilingualism: Language and Cognition* 2: 169-186.
- Sankoff, David and Shana Poplack. 1981. A formal grammar for code-switching. *Research on Language and Social Interaction* 14: 3-45.
- Tsimpli, Ianthi, Antonella Sorace, Caroline Heycock and Francesca Filiaci. 2004. First language attrition and syntactic subjects: A study of Greek and Italian near-native speakers of English. *International Journal of Bilingualism* 8: 257-277.
- White, Lydia. 2003. *Second Language Acquisition and Universal Grammar*. Cambridge: Cambridge University Press.
- Woolford, Ellen. 1983. Bilingual Code-Switching and Syntactic Theory. *Linguistic Inquiry* 14: 520-536.