Bilingualism: Language and Cognition 19 (4), 2016, 706–709 © Cambridge University Press 2016 doi:10.1017/S136672891600050X

INTRODUCTION

# Cross-language effects in bilingual production and comprehension: some novel findings*

MARGARET DEUCHAR
*Bangor University*
*University of Cambridge*

(Received: March 18, 2016; accepted: March 21, 2016; first published online 21 April 2016)

*This special issue began as a conference on Bilingual and Multilingual Interaction at Bangor University in 2012. The papers collected here all have novel elements, either because of their innovative methods, their unusual data, or their unexpected findings. They present findings from studies of bilinguals speaking six different pairs of languages, and use a range of methods including experiments, naturalistic observation and auditory judgment data. Despite the differences in subject matter and methodological approaches, all the papers demonstrate that bilinguals draw on resources which are different from those of monolinguals. They show that the two languages spoken by bilinguals have clearly discernible effects on one another, and that these effects can potentially be enhancing. Future research will no doubt build on the studies presented here and extend our understanding of cross-language effects in bilingual production and comprehension.*

Keywords: grammatical processing, speech perception, speech production, argument structure, grammatical gender, motion events and spatial language, behavioural measurements, corpora, offline tasks, aphasia, bimodal bilinguals, healthy normal subjects, Spanish–Basque, HKSL–Cantonese, Japanese–English

This special issue has its roots in a conference on *Bilingual and Multilingual Interaction* at Bangor University in 2012. A dominant theme among the papers presented within the *Bilingual Grammar* strand turned out to be the cross-language effects which we can observe in bilingual production and comprehension. Some of the contributors to this special issue were present at that conference while others were recruited because of their interest and expertise in this theme. The papers collected here all have novel elements, either because of their innovative methods, their unusual data, or their unexpected findings.

The first paper, by Kootstra and Doedens (Koostra & Doedens), originated as a presentation at the Bangor conference and shows how speakers' syntactic choices were affected by a combination of factors, including their knowledge of the two languages (Dutch and English), their experience of input from those languages, and language-specific verb bias. Not only did exposure to Dutch both before and during the experiment influence speakers' syntactic choices in Dutch, but it also influenced their syntactic choices in English. Conversely, their exposure to English influenced their choices in Dutch, thus demonstrating cross-linguistic priming in both directions. The influence of Dutch on English was in fact stronger than the other way round, which Kootstra and Doedens explain in terms of their participants' dominance in Dutch. The authors also offer some interesting general speculation about the way in which cross-language priming could affect the frequency distributions within which linguistic structures are used, and thus lead to contact-induced language change. Future research will no doubt determine whether similar results to Kootstra's and Doedens' can be obtained from less closely related language pairs[1] than Dutch and English.

The second paper, by Cacoullos and Travis (Cacoullos & Travis), adds further weight to the evidence for cross-language priming in bilinguals, and particularly so because the data were collected using a different method. In this paper the evidence for cross-linguistic priming comes from naturalistic conversations between Spanish–English bilinguals in New Mexico. The focus of the study is the use (and non-use) of first person pronouns in Spanish and English. The New Mexican bilinguals engage frequently in code-switching between the two languages, and the authors set out to test the

* All papers collected in this Special Issue except one (by Chang) were originally presented at the conference held at Bangor University, from 30th March to 1st April 2012. This conference was part of the programme of the ESRC Centre for Research on Bilingualism in Theory and Practice, and the ESRC is gratefully acknowledged. Thanks are due to Theresa Biberauer and M. Carmen Parafita Couto for comments on an earlier version of this Introduction.

Address for correspondence:
Margaret Deuchar, Dept of Theoretical and Applied Linguistics, University of Cambridge, 9 West Rd., Cambridge, CB3 9DP, UK
*m.deuchar@gmail.com*

[1] There is some evidence that contact between English and the VSO language Welsh may have accelerated the variable omission of initial auxiliary verbs in Welsh utterances (see Davies & Deuchar 2014).

hypothesis that code-switching facilitates convergence between languages, or specifically, "that code-switching to English results in higher rates of expressed subjects in Spanish". However, a variationist analysis of the choice of first person pronominal subject *yo* with Spanish finite verbs showed no effect of the presence of code-switching in the same intonation unit. Other factors such as the occurrence of an expressed coreferential subject and the semantic class of the verb turned out to have more of an effect on the appearance of *yo* than proximate code-switching. However, where proximate code-switching is shown to have an effect is in the relative importance of these conditioning factors. For example, under proximate code-switching the semantic class of the verb is no longer significant, and the effect of a previous coreferential first person subject is reversed: *yo* is favoured by a previous coreferential subject where there is proximate code-switching, but disfavoured in Spanish without proximate code-switching. Cacoullos and Travis argue that this and other evidence discussed in the paper is consistent not with the "convergence-via-code-switching-hypothesis" but instead with their proposed alternative, the "contextual distribution via code-switching hypothesis". This study demonstrates the benefits of a careful variationist analysis of naturalistic data and suggests that code-switching has a more subtle effect on grammatical choices than had previously been thought.

Fung and Tang's study (Fung & Tang) continues the theme of code-switching, but between a spoken language, Cantonese, and Hong Kong Sign Language (HKSL). These two languages contrast in word/sign order in that Cantonese is head-initial while HKSL is head-final. The authors seek to determine whether functional elements (modals, negatives, auxiliaries) appear to determine head directionality in cross-modal language mixing in a similar way to that suggested by Chan (2008). Because of the nature of the visual medium of sign language, which allows the co-articulation of sign and speech, they distinguish between code-switching and code-blending. Code-switching involves the sequential alternation between signing and speech whereas code-blending involves the simultaneous production of both signed and spoken linguistic units. The data used are from a child interacting with three deaf native adult signers over a period when he ranged from two to six years old. Code-blends were found to be more frequent than code-switches, and to include the blending of functional heads. The data are somewhat sparse (and partially developmental), but switches between functional heads and complements tend to be compatible with predictions based on Chan's findings. In the case of the highly numerous code-blending of functional heads it is not possible to make predictions about the placement of the complement, and this turns out to appear in both positions, either before the head or after it. Nevertheless, this study provides some preliminary evidence that cross-language effects apply cross-modally, and future research on language contact in signers will doubtless build on these findings.

The paper by Konishi, Wilson, Golinkoff, Maguire and Hirsh-Pasek (Konishi, Wilson, Golinkoff, Maguire & Hirsh-Pasek) focuses on the construal of novel verbs in both Japanese and English by bilinguals in these languages, with some unexpected findings. Konishi et al. point out that although Japanese has traditionally been classified as prioritising the encoding of path in its verbs while English prioritises manner, Japanese verbs encode manner to a greater extent than e.g., Spanish, a more extremely path-oriented language. In fact Maguire, Hirsh-Pasek, Golinkoff, Imai, Haryu, Vanegas, Okada, Pulverman and Sanchez-Davis (2010) had found previously that Japanese monolinguals prioritised manner over path like English monolinguals, albeit to a slightly lesser extent. What is interesting about Konishi et al.'s findings is that in using the same stimuli with bilinguals as Maguire et al. had used with monolinguals, they found that manner was no longer preferred in Japanese, but path instead. Konishi et al. suggest that Japanese–English bilinguals may use this prioritisation of path as an "adaptive tool" to distinguish the two languages. Thus it could be said that in this study the cross-language effects work to keep the languages apart rather than allowing them to converge. More research is needed, as Konishi et al. acknowledge, but in the meantime their paper (along with others in this special issue) adds to the accumulating evidence in support of the statement in Grosjean's famously entitled (1989) article "The bilingual is not two monolinguals in one person".

This point is driven home with additional force in the next paper, by Chang (Chang), who points out the rarely studied positive effect that knowledge of a heritage language can have on competence in the speaker's other, dominant, language. His data show that heritage speakers of Korean in the USA are more accurate than native speakers of English in perceiving contrasts in unreleased stops in English. Chang suggests that this linguistic advantage is in contrast with "the intermediate kind of linguistic knowledge" which he says is characteristic of heritage speakers and which differentiates them from speakers who have the same L1 but have not become dominant in another language. But although Chang considered his heritage speakers to have weak proficiency in Korean, his data showed that their ability to perceive unreleased stops in Korean was equal to that of Korean speakers raised in South Korea who had learned English as a second language. Chang considers this latter group to be "native" speakers of Korean in contrast to his heritage speakers, but he does point out that the evidence from other studies of differences between "native" and heritage speakers may be due to the nature of the input (cf. also Rothman & Treffers-Daller, 2014). Far

https://doi.org/10.1017/S136672891600050X Published online by Cambridge University Press

from suggesting aspects of inadequacy conjured up by the idea of incomplete acquisition, Chang's study has demonstrated how heritage speakers of Korean actually show superiority in some aspects of competence in English in comparison with monolingual native English speakers.

The paper by Munarriz, Ezeizabarrena and Gutierrez-Mangado (Munarriz, Ezeizabarrena & Gutierrez-Mangado) picks up on the theme explored by the first two papers, cross-linguistic syntactic influence. But whereas the Dutch–English and Spanish–English bilinguals studied in the first two papers use two languages which are relatively close in typology and structure, this is not the case for Spanish and Basque. These languages contrast in both word order and morphosyntactic alignment. Munarriz et al. report on a case study of a Spanish–Basque bilingual with chronic Broca's aphasia following a stroke, who had received therapy mainly in Spanish. Although some previous studies had reported positive effects of therapy in one language on the other language of bilingual aphasics, the authors suggest that many factors may be influential including the typological distance between the languages. They focus specifically on their participant's comprehension of questions and relatives in Spanish and Basque, structures which in generative terms involve movement and which can be assumed to have a degree of complexity. Although all the theoretical approaches surveyed predicted better comprehension of subject than object questions in both languages, and better comprehension of subject than object relatives in Spanish, some approaches predicted better comprehension of subject than object relatives in Basque, while others predicted the reverse. The participant's better comprehension of object relatives was consistent with the Competition Model (see MacWhinney, 1987) in that agent-theme word order and case-marking converged in object but not in subject relatives. The Competition Model also predicted differential comprehension of Spanish relatives (favouring subject relatives in this case), but the participant showed no impairment in Spanish, leading to the conclusion that her impairment was selective and language-specific. The results of this study thus have both empirical and theoretical value. They demonstrate that two typologically contrasting languages need not show cross-language influence in impairment, and that the specific impairment which occurs in Basque provides some support for the Competition Model.

The final paper in this special issue deals with the same pair of languages as the previous paper, Spanish and Basque. However, this final paper addresses the question of how bilingual speakers deal with 'conflict sites' in combining their two languages when the grammar of the two languages predicts contrasting constructions. Whereas the determiner appears before the noun in Spanish, it appears after the noun in Basque. Furthermore, Spanish has grammatical gender whereas Basque does not. In this study Parafita Couto, Munarriz, Epelde, Deuchar and Oyharçabal (Parafita Couto, Munarriz, Epelde, Deuchar & Oyharçabal) aimed to determine how gender is assigned to Basque nouns when they appear after Spanish determiners in code-switched utterances. Whereas a masculine default gender had been observed in mixed Spanish–English nominal constructions, our results suggested a feminine default instead. We explain this in terms of cross-language effects which involve reanalysis of the postnominal Basque determiner *-a* as a marker of feminine gender. Thus we find further evidence to complement that of other studies in this special issue, that bilingual speakers make use of different resources from those used in monolingual communication.

The papers in this special issue present findings from studies of bilinguals speaking six different pairs of languages, and use a range of methods including experiments, naturalistic observation and auditory judgment data. Despite the differences in subject matter and methodological approaches, all these papers demonstrate that bilinguals draw on resources which are different from those of monolinguals. They show that the two languages spoken by bilinguals have clearly discernible effects on one another, and that these effects can potentially be enhancing. It is still an open question to what extent typological relations between the languages of a bilingual modulate these effects, however, and which ones. For example, the typological distance between Spanish and Basque may help to account for the language-specific impairment of the Spanish–Basque aphasic, but did not prevent cross-language effects in gender assignment according to judgments made in a non-clinical context. Future research will no doubt build on the studies presented here and extend our understanding of cross-language effects in bilingual production and comprehension.

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