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INTRODUCTION

# L3 acquisition: A focus on cognitive approaches*

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*Interest in third language (L3) acquisition has increased exponentially in recent years, due to its potential to inform long-lasting debates in theoretical linguistics, language acquisition and psycholinguistics. From the very beginning, researchers investigating child and adult L3 acquisition have considered the many diverse cognitive factors that constrain and condition the initial state and development of newly acquired languages, and their models have duly evolved to incorporate insights from the most recent findings in psycholinguistics, neurolinguistics and cognitive psychology. The articles in this Special Issue of* Bilingualism: Language and Cognition*, in dealing with issues such as age of acquisition, attrition, relearning, cognitive economy or the reliance on different memory systems – to name but a few – provide an accurate portrayal of current inquiry in the field, and are a particularly fine example of how instrumental research in language acquisition and other cognitive domains can be to each other.*

Keywords: L3 acquisition, attrition, cognitive approaches, heritage speakers, lexicon, multilingualism, syntax

From all the driving forces motivating progress in Cognitive Science, few are as deeply grounded in an ever-growing social reality as multilingualism. This phenomenon, already a central issue in current sociology and pedagogy, has attracted the attention of all those concerned with the language-related mechanisms of the human mind, if only because it multiplies the factors at play. With this fact, however, comes the (perhaps inevitable) question of whether an expansion of the variable set indeed entails a qualitative difference with respect to monolingual and bilingual systems. This special issue of *Bilingualism: Language and Cognition*, while presenting state-of-the-art work from researchers who assume that third language (L3) acquisition is in fact inherently unique, also contains an interesting critical discussion of the subject by Kees de Bot and Carol Jaensch. The authors review evidence from a wide array of fields ranging from acquisition to attrition, from aphasia and neurolinguistics to recent efforts in functional brain mapping. Taken together, the findings of these studies paint a dynamic picture that may lead us to question traditional distinctions based on the sheer number of languages spoken by a given individual. While respecting that acquisitionists and psycholinguists may have found, and continue to find, these distinctions operationally useful, de Bot and Jaensch argue that the weight of evidence now challenges the idea of different natural languages as neuro-psychologically separate entities, and suggest that a view of language processing which emphasises ontogeny over stasis (as exemplified in the Dynamic Systems Theory, e.g. de Bot, 2012) may help us better understand, and account for, the effects observed.

Two of the contributions to this issue are particularly illustrative of the developmental view of multilingualism advocated by de Bot and Jaensch: Peter Ecke's dynamic account of the multilingual lexicon, and Maria Polinsky's study on heritage speakers. In the first, the author presents a complex picture in which both typological similarity and L2 status are equally determinant for cross-linguistic influence (CLI) in the multilingual lexicon. The author discusses the Parasitic Model of vocabulary acquisition (Hall, 2002; Hall & Ecke, 2003), according to which new L3 representations act as 'parasites' upon pre-existing L1 and L2 items with which they share features of form, (syntactic) frame or meaning. Ecke reviews evidence of how these connections are bypassed as proficiency increases and the L3 lexicon gains autonomy, and discusses some of the research which highlights the intricate, non-linear pathways of multilingual lexical development.

What should be apparent from the discussion so far is that the high complexity of all possible scenarios considered in the multilingual context demands an equally multi-angled approach. Therefore, it is essential that researchers keep empirically manipulating variables such

* With the exception of the paper by Cristina Sanz, Hae In Park and Beatriz Lado, all the papers collected in this Special Issue were presented at the seminar Third Language (L3) Acquisition: A Focus on Cognitive Approaches, which took place at the University of the Basque Country (UPV/EHU) in Vitoria-Gasteiz on May 24–25, 2012. The seminar could not have been organised without the funding support provided by two grants, from the Basque Government (IT311–10) and from the University of the Basque Country UPV/EHU (UFI 11/06), respectively.

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as age of acquisition (AoA), language combination and order of acquisition. From this perspective, heritage speakers (HSs) are a particularly interesting group of study, since chronological order of acquisition and proficiency/dominance are highly dissociated in their case: their chronological L1 may well be their L3 (or L4) in terms of proficiency. It is precisely this re-learning of their native language as an L3 that Polinsky explores in her contribution. While HSs seem to present certain advantages over non-heritage L3 learners in the domain of phonetics and phonology, their patterns of acquisition show multiple instances of (often non-facilitative) transfer from the L2. Polinsky argues that these findings contrast with the predictions of the Cumulative-Enhancement Model (CEM; Flynn, Foley & Vinnitskaya, 2004) – in that non-facilitative transfer is obtained – and the Typological Primacy Model (TPM; Rothman, 2010) – in that the L2 seems to play a prominent role regardless of typological considerations. However, while the data seem to favour the predictions of the L2 Status Factor (L2SF; Bardel & Falk, 2007), Polinsky concedes that formal instruction and implicit knowledge are confounded in the case of HSs with a variety of other factors –amount of exposure being perhaps the most important – that may conspire to grant the L2 its purportedly privileged status.

Following a strong trend among linguists and acquisitionists in recent decades, researchers working on L3 acquisition are paying an increasing degree of attention to aspects of language processing. One of the most prominent models of L3 morphosyntactic acquisition proposed so far, Jason Rothman's TPM has been particularly attentive to cognitive factors, especially in its latest versions, e.g. Rothman, 2013, and in his contribution to this volume. In the present paper, the author articulates the mechanisms underlying the mind's hypothesised acumen for accessing and using structural proximity for multilingual transfer selection. Rothman proposes an implicational hierarchy of linguistic cues that the parser is pre-conditioned to use for selection of a transfer source when multiple options are in principle available (as in the L3 context), considers the effect that proficiency and age of acquisition may have on the process, and reviews some of the evidence in favour of the TPM. One of the latest studies lending support to the model is also included in this issue: David Giancaspro, Becky Halloran and Michael Iverson tested the predictions of the three major models mentioned above – the CEM, the L2SF and the TPM – by looking at the acquisition of differential object marking in Brazilian Portuguese by three groups of successive and heritage bilinguals of Spanish and English. Their results, with all groups showing evidence of transfer from Spanish irrespective of the order or the age at which it was acquired, also support Iverson's (2009) claim that successful transfer into the L3 of a syntactic property from an L2 learnt past puberty entails full acquisition of the property, which would in turn validate Full Transfer/Full Access models of L2 acquisition (Schwartz & Sprouse, 1996).

The more recent versions of Antonella Sorace's Interface Hypothesis (IH; e.g. Sorace, 2011) also rely on processing factors to explain the property delays identified in L2 learners: since integrating context and grammar further taxes the processor, internal interfaces – i.e. those between syntax and other linguistic modules – are less problematic for them than external interfaces – i.e. those between syntax and other cognitive modules. In their paper in this volume, Roumyana Slabakova and María del Pilar García Mayo report the results of a study which aims to test the predictions of the IH on L3 learners, a population they expected to be even more vulnerable than second language learners for the same processing reasons as those argued by Sorace. Slabakova and García Mayo's results, while partially supporting the IH, do not show a significant difference between L2 and L3 learners, who were equally unable to suppress misleading native or L2 transfer. The authors consider these findings as indicative not only of cumulative enhancement (as the CEM would predict) but also of cumulative inhibition.

In a similar effort to explore other factors modulating transfer in L3 acquisition, Ylva Falk, Christina Lindqvist and Camilla Bardel conducted a study in which participants, native speakers of Swedish, differed in their amount of meta-linguistic knowledge (MLK) in the L1. Following Paradis's (e.g. 1994, 2009) Declarative/Procedural Model, the authors expected the participants with less MLK to transfer from their L2 (English) to the new L3 (Dutch), as would be predicted by the L2 Status Factor. Those with more MLK in Swedish, however, should establish their L1 as the main source of transfer. The results of the study largely confirm these hypotheses, and reinforce the view that MLK lies behind the primacy of the L2 as a transfer source that the authors have proposed in previous work (Bardel & Falk, 2007; Falk & Bardel, 2011). The results obtained by Giancaspro et al. and Falk et al. partly contrast with those presented in the study by Cristina Sanz, Hae In Park and Beatriz Lado featured in this special issue. Their investigation, framed within the scope of Bates and MacWhinney's (1987) Competition Model (CM), approaches the subject from a different theoretical perspective but yields results that can be equally used to contrast the predictions of models based on Universal Grammar. The participants of the study, native speakers of English with different L2 backgrounds (Spanish and Japanese), were instructed and tested in target structures of Latin. This allowed the authors to identify which set of cues was used by participants to assign theta roles when facing novel sentences in their first and successive approaches to the language. Their results suggest a privileged role of the L1 during initial exposure to the L3, since participants seemed to rely on

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the most valid cue in their L1, namely subject–verb–object (SVO) word order, irrespective of typological proximity, L2 background or (in)convenience of transfer. Extending the predictions of the CM to the domain of L3 acquisition, Sanz et al. argue that the relative weight of the L1 with respect to the L2 in successive bilinguals could account for this pre-eminence of L1-related cues.

De Bot and Jaensch's call for longitudinal studies also resonates within this issue. In a longitudinal study containing data gathered along a period of four years, Laura Sánchez introduces two particularly interesting variables: her participants were Spanish–Catalan balanced bilingual children (aged 9.9 years at the first time of data collection). In her study, Sánchez explores the roles that the participants' two first languages and their L2 (German, learnt from age six) play in the acquisition of L3 English. Results show that German–English blends were common in the English sentences of these children, suggesting that output speech is sensitive to CLI, particularly from the L2 and most prominently at earlier stages of L3 acquisition.

The articles in this special issue come together as a particularly inspiring snapshot of current research in L3 acquisition, a field that is becoming increasingly aware of its critical place within the larger endeavour of Cognitive Science. We sincerely hope that, after reading these papers, the audience of *Bilingualism: Language and Cognition* is left with some interesting answers – or, better still – some interesting questions.

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