COM 2016
Conference on Multilingualism
Het Pand, Ghent
11th - 13th September 2016
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Programme

Sunday, 11th September 2016

11.30 Registration + lunch
13.00 Conference opening
13.10 Symposium on the cognitive effects of bilingualism
   Presentations by Thomas Bak, Kenneth Paap, Esli Struys, and Evy Woumans
   Followed by a (heated) discussion
15.00 Afternoon break
15.20 Talk session 1: Sentence processing
   [T1.1] Reanalysing object gaps in non-native sentence processing: Evidence from ERPs
         Anna Jessen & Claudia Felser
   [T1.2] Task sensitivity in L2 sentence comprehension: Evidence for ‘good enough’ processing
         Maryann Tan & Anouschka Foltz
   [T1.3] L2 processing of complex noun phrases in English
         Shanley Allen, Leigh Fernandez, Mary Elliott, Hannah Powers, Neiloufar Family, & Kalliopi Katsiaka
   [T1.4] Syntactic conflict between languages in second-language sentence processing: An ERP study
         Kristin Lemhöfer & Anne Mickan
16.40 Keynote 1: Jon Andoni Duñabeitia
18.00 Reception

Monday, 12th September 2016

09.30 Talk session 2: Morphosyntax and speech
   [T2.1] Form and function in the multilingual mind: The L2 English influence on Chinese learners’ L3 Swedish definiteness markers
         Anders Agebjörn & Frida Splendido
   [T2.2] Incidental learning of a complex agreement rule in L2: The role of frequency and working memory
         Nadia Denhovska
   [T2.3] Elucidating the underlying mechanism of syntactic co-activation: Are rules simply co-active, or are they fully interactive?
         Awel Vaughan-Evans, Guillaume Thierry, & Manon Jones
   [T2.4] Time course of phonological encoding in proficient bilinguals
         Audrey Bürki, Jasmin Sadat, & F.-Xavier Alario
10.50 Morning break
11.10 Talk session 3: Executive functions
   [T3.1] Do executive functions influence literacy skills differently in mono- and bilinguals?
         Sophia Czapka & Julia Festman
The effects of alternational code-switching on executive functions
Julia Hofweber, Theodoros Marinis, & Jeanine Treffers-Daller

One brain, one language, two codes? The curious case of Norwegian
Viktória Havas & Mila Vulchanova

Executive control network in monolinguals and bilinguals: A structural equation modelling approach
Beinan Zhou & Andrea Krott

12.30 Lunch + Poster session 1

Syntactic mimicry and its prosocial effects in L1 and L2
Loes Abrahams & M. Teresa Bajo

School readiness and reading: Does bilingualism matter?
Laura Alaria, Tamara Patrucco-Nanchen, Céline Béguin, Diane Poulin-Dubois, Margaret Friend, & Pascal Zesiger

The development of cognitive control and working memory during second language acquisition: A longitudinal study
Sofie Ameloot, Evy Woumans, Emmanuel Keuleers, & Eva Van Assche

Anaphoric dependencies in Basque cl2 language acquisition
Maialen Iraola Azpiroz & Maria-José Ezeizabarrena

Do we use the same mechanisms of cognitive control in linguistic and non-linguistic tasks?
Ihor Bilouschchenko & Dominiek Sandra

The role of uncertainty in internal error detection during L2 learning
Sybrine Bultena, Claudia Danielmeier, Harold Bekkering, & Kristin Lemhöfer

Identification of facial expressions of emotion in balanced and unbalanced 4-year-old bilinguals
Marie-France Champoux-Larsson, Alexandra S. Dylman, Helena Örnkloo, & Francisco G. Esteves

Spatial ability and foreign language learning
Frederick Chang & Mei-ying Chen

Powerful or powerless? Identity and language learning of new immigrants in Taiwan
Mei-ying Chen & Fu-hsiung Su

Multilingualism and academic literacy
Lieve De Wachter, Dirk Speelman, & Jordi Heeren

Do non-native speakers adapt speech production after speech perception?
Wouter P. J. Broos*, Aster Dijkstra*, Eva Van Assche, Heleen Vander Beken, Nicolas Dirix, Evelyne Lagrou, Robert J. Hartsuiker, & Wouter Duyck

Age of language acquisition influences the cortical language organization in multilingual patients undergoing awake brain mapping
Alejandro Fernandez-Coello, Viktória Havas, Montserrat Juncadella, Joanna Sierpowska, Antoni Rodriguez-Fornells, & Andreu Gabarrós

Exploring conceptual generalization of response-effect compatibility with bilingual transfer
Noémi Földes, Andrea M. Philipp, Arnaud Badets, & Iring Koch

Contact Nepali in Kathmandu valley: A study of language use and attitude in Sherpa
Bhim Lal Gautam

Language in goal framing
Anna Hatzidakis

What do I choose? Influence of interlocutors’ awareness
keerthana kapiley & Ramesh Kumar Mishra

Grammatical gender as a window to different acquisition trajectories in bilingual and monolingual children
Hamutal Kreiner & Tamar Degani

Current language experience influences eye movements during L1, L2, and L3 reading: Evidence from a gaze-contingent moving window paradigm
Agnieszka Lijewska, Iga Krzysik, Veronica Whitford, & Debra Titone

Second language vocabulary learning: Adults suffer social inhibition
Clara D. Martin, Amy Underwood, & Nicola Molinaro
The effects of interpreting training and expertise on executive functioning: A systematic review
Soudabeh Nour & Esli Struys

The impact of syntactic and processing factors on agreement errors in L2 vs. L1 German
Sandra Pappert

Relationship between verbal fluency and executive control in bilinguals
Abhijeet Patra, Arpita Bose, & Theodoros Marinis

Is foreign language learning the earlier the better? Empirical studies on the critical period in China and its implications
Li Qingzhao

Differential working memory capacity in L1 and L2
Eli Rugaard & Christer Johansson

Can non-native speakers use implicit causality information as a predictive cue?
Judith Schlenter & Claudia Felser

Input Diversity in Second Language Word Learning
Brendan Tomoschuk, Victor Ferreira, & Tamar Gollan

Grammatical gender processing in Dutch learners of Spanish
Jorge Valdés Kroff, Maria Carmen Parafita Couto, Elisabeth Mauder, Leonie Cloos, & Boy Persoon

Speaking two languages with one mind: Language selection errors during switching
Xiaochen Zheng, Kristin Lemhöfer, & Ardi Roelofs

14.00 Keynote 2: Narly Golestani
15.00 Afternoon break
15.20 Talk session 4: L2 learning and memory

[T4.1] Memory for texts in the first and second language
Heleen Vander Beken & Marc Brysbaert

[T4.2] Noticing the gap: Does being aware of what you don’t know aid L2 word learning?
Johanna de Vos, Herbert Schriefers, & Kristin Lemhöfer

[T4.3] Learning from natural L2 input: The acquisition of grammatical gender in a foreign language
Annika Brandt, Kristin Lemhöfer, & Herbert Schriefers

[T4.4] How new L2 words become memories: Lexicalization in advanced L1 Dutch learners of L2 English
Merel Keijzer & Maria Chepela

[T4.5] What can proactive interference tell us about the cognitive architecture of bilingual lexioco-semantic memory?
Lize Van der Linden, Wouter Duyck, Marie-Pierre de Partz, Eleonore Smalle, Morgane Simonis, & Arnaud Szmalec

17.00

19.00 Conference dinner

Tuesday, 13th September 2016

09.30 Talk session 5: Monitoring and control

[T5.1] Monitoring in multiple modalities in the first and second language
Wouter P. J. Broos, Wouter Duyck, & Robert J. Hartsuiker
Is bilingual language control restricted to language tags/schemas? The effect of language practice and language-specific item practice on asymmetrical switch costs
Mathieu Declerck & Andrea M. Philipp

Bilingual Language Control: Recognition versus production
Michela Mosca & Kees de Bot

Experimentally increased L2 activation reverses language switch costs asymmetry but not global L1 slowing
Patrycja Kalamala, Joanna Durlik, Karolina Łukasik, Jakub Szewczyk, & Zofia Wodniecka

10.50 Morning break

Talk session 6: Language control and switching

Stimulus-response binding in language switching
Andrea M. Philipp, Mathieu Declerck, & Iring Koch

Multilingual language control and executive function: A replication study
Greg Poarch

Is there a bimodal advantage in language switching?
Simone Schäffner & Andrea M. Philipp

Switching costs in a multilingual reading span task
Benoît Perriard, Maurits van den Noort, & Valérie Camos

12.30 Lunch + Poster session 2

Metacognitive strategies in learning vocabulary: An experimental study
Ajhar Ahmad

Bilingualism in Cape Verde: A look at the determiner system
Nélia Alexandre

Resolution of anaphora ambiguity in L2
Nikos Amvrazis

Impact of L2 literacy on language production and cognition in healthy biliterate -bilingual adults
Anusha Balasubramaniam, Arpita Bose, & Ianthi Tsimpli

Age of acquisition effect on the second language learning
Aleksandra S. Bub & Olga V. Nagel

Influential factors of second language syntactic analysis: An empirical review
Sendy Caffarra, Nicola Molinaro, Doug Davidson, & Manuel Carreiras

Mechanisms of language control in bilinguals: An fMRI study on early and late bilinguals
Francesca Cortelazzo, Barbara Köpke, Xavier de Boissezon, & Vincent Lubrano

Structural brain changes associated with lifelong bilingualism
Yuriem Fernández García, Lorna García-Pentón, Manuel Carreiras, & Jon Andoni Duñabeitia

Using pupillometry to investigate second language processing
Leigh Fernandez, Barbara Höhle, Jon Brock, & Lyndsey Nickels

Does early-English education have an influence on pupils’ executive functions?
Claire Goriot, Roeland van Hout, Mirjam Broersma, James M. McQueen, & Sharon Unsworth

Bilingual theory of mind: True and false
Cameron James & Lynne G. Duncan

Planning scope for sentence production in L1 and L2
Toru Hitomi & Robert J. Hartsuiker
Attention networks functioning in bilingual children: Evidence from Polish-English migrant children living in the UK
Joanna Kolak, Zofia Wodniecka, Ewa Haman, Marta Bialczka-Pikul, & Magdalena Luniewska

On the cognitive reality of multi-word units in L2 speakers
Saskia E. Lensink, Niels O. Schiller, & Arie Verhagen

Toward an integrative view of multilingualism in infancy – Understanding language developmental discrepancies between monolingual and bi-/multilingual infants through multi-domain perspectives
Liquan Liu

Lost in translation: Analysis of oral and written narratives for linguistic and cultural minority students
Maung Nyeu

Assessing discourse competence in a multilingual context – The case of Nigerian university students
Omola Mercy Odu

Bilingual swearing – Emotions or social normativity at play?
Michal B. Paradowski & Marta Gawinkowska

A three-step procedure to detect gender bias on a language test
Write François Pichette, Sébastien Béland, & Justyna Leśniewska

Clearly understood? Comprehension of health-related information produced by the UK's National Health Service
Michael Ratajczak, Judit Kormos, Robert Davies, & Megan Thomas

Does second-language immersion education influence executive functioning?
Morgane Simonis, Benoit Galand, & Arnaud Szmalec

Neural overlap of L1 & L2 semantic representations within and across modalities: A decoding approach
Eowyn Van de Putte, Wouter De Baene, & Wouter Duyck

Listening in the wrong language
Mónica A. Wagner, Kristin Lemhöfer, James M. McQueen

Convergence in the bilingual lexicon: A pre-registered replication study
Anne White, Gert Storms, & Barbara Malt

The multilingualism of local Chinese in Singapore and Shanghai: A systemic functional analysis
Yanning Yang

Talk session 7: Reading and listening

A corpus study of bilingual reading
Nicolas Dirix, Uschi Cop, Denis Drieghe, & Wouter Duyck

Response competition for cognates: The cognate facilitation effect depends on stimulus list composition
Eva D. Poort & Jennifer M. Rodd

When you don’t understand what you read. Vocabulary support when reading academic texts in English
Ellen De Bruyne, Marcelo Kremer, & Martin Valcke

Differential working memory capacity in L1 and L2
Eli Rugaard & Christer Johansson

Afternoon break

Keynote 3: Tamar Gollan

Conference closing
About COM 2016
Conference on Multilingualism 2016

The Conference on Multilingualism actually has a longstanding tradition. It started in 2005 at the University of Trento under the name ‘Workshop on Bilingualism’. Since then, the name has been changed a couple of times to ‘Neurobilingualism’ and ‘Workshop of Neurobilingualism’. This makes the current conference the ninth edition of the gathering.

Organisers

This year, the Faculty of Psychology and Educational Sciences at Ghent University is organising the Conference on Multilingualism. Most members of the organising committee are part of the research project LEMMA (*Language, Education, and Memory in Multilingualism and Academia*), conducting research on the interface between language and memory in multilingualism.

The LEMMA project contains six strands of research, all concerned with multilingualism. These seven strands compose the two main research lines: language and memory. The former contains the strands ‘listening’, ‘speaking’, ‘reading’, and ‘monitoring’; the latter comprises those of ‘semantic memory’, and ‘retention’. If you are interested in hearing more about this project, you will have the opportunity to see a general overview in the form of a poster during the two poster sessions of this conference.

Naturally, many more people were involved in setting up this conference. All members of both the organising and scientific committee are listed below.

*Membes of the organising committee:*

Wouter Broos, Marc Brysbaert, Ellen De Bruyne, Aster Dijkgraaf, Nicolas Dirix, Wouter Duyck, Robert Hartsuiker, Toru Hitomi, Emmanuel Keuleers, Marcelo Martins Kremer, Dominiek Sandra, Esli Struys, Martin Valcke, Eva Van Assche, Heleen Vander Beken, Evy Woumans

*Membes of the scientific committee:*

Marc Brysbaert, Wouter Duyck, Robert Hartsuiker, Emmanuel Keuleers, Dominiek Sandra, Monika S. Schmid, Esli Struys, Martin Valcke, Eva Van Assche, Evy Woumans

Find us on social media

COM 2016 will be posting updates on the conference on both Facebook and Twitter. To go to our Facebook page, enter the following link:

https://www.facebook.com/Multilingualism2016/

To follow us on Twitter, use this link:

https://twitter.com/COM2016_Ghent

If you like to tweet something about the conference yourself, you can use #Com2016.
Welcome to Ghent
The City of Ghent

The history of Ghent began in the year 630, when Saint Amandus chose the site of the confluence (or ‘Ganda’) of the two rivers, the Leie and the Scheldt, to construct an abbey. Nearly 1400 years of history are still palpable in the city today. Nowhere else does one find so much history per square metre than in the historical heart of Ghent. Some places to see or visit are:

- **Saint Bavo Cathedral**: A Gothic cathedral consecrated in 942. The chapel was subsequently expanded in the Romanesque style in 1038, and during the 14th through 16th centuries, nearly continuous expansion projects in the Gothic style were executed on the structure.

- **Belfry**: Through the centuries, the belfry served not only as a bell tower to announce the time and various warnings, but also as a fortified watchtower and the place where the documents evidencing the municipal privileges were kept. The bells in the belfry originally only served a religious purpose. Gradually the bells got a secular role by regulating daily life in the growing medieval city. Construction on the Belfry began around 1313 and reached completion in 1380.

- **Saint Nicholas’ Church**: Next to the Belfry and Saint Bavo Cathedral, the third medieval tower that overlooks the city of Gent. Erection began in the early 13th century as a replacement for an earlier Romanesque church. Construction continued through the rest of the century in the local Scheldt Gothic style (named after the nearby river). Typical of this style is the use of blue-grey stone from the Tournai area, the single large tower above the crossing, and the slender turrets at the building's corners.

- **Graslei harbour**: A scenic quay at the right-hand side of the Leie alongside historic houses, some dating from as long ago as the 13th century.

- **Boekentoren (Book Tower)**: Designed in 1933 by the Belgian architect Henry van de Velde, this tower is part of the Ghent University Library and currently houses three million books. The Boekentoren is directly adjacent to the Blandijn, the buildings of Ghent University’s Faculty of Arts and Philosophy. Situated on the highest ground in the city, the site offered the architect a unique opportunity to give to Ghent its fourth tower, not for the ringing of bells this time, but for books.
Ghent University

The Rijksuniversiteit Gent (State University of Ghent) was officially opened under the rule of King William I on 9 October 1817, which means it will celebrate its 200 anniversary in the upcoming year. The first rector was the physician Jean-Charles Van Rotterdam and the official language of tuition was Latin. In 1930, the university became the first institution in Belgium to teach in Dutch and in 1991, the name Rijksuniversiteit Gent was officially changed to Universiteit Gent (Ghent University).

Ghent University is not a campus university. Over the years, the university’s sites and buildings were set up scattered across the city, and today the university has seamlessly fused with the city. Geographically speaking, the university is spread out over and around the city centre. Most of the university buildings are located on the north-south axis, stretching from the historical city centre (including the Aula and Het Pand) to the buildings on the Sterre and the Ghent University Hospital. In terms of origin and style, the university’s patrimony is also characterised by its enormous diversity; from the thirteenth century monastery Het Pand, to the classical façades of the Aula Academica, the Plateaustraat and the Rommelaere Institute, and the famous Book Tower of Henry van de Velde.

Ghent University has 117 departments across 11 faculties, offering high-quality research-based educational programmes in virtually every scientific discipline. It is the Faculty of Psychology and Educational Sciences that is organising this Conference on Multilingualism.

Venue Het Pand

Het Pand is a former Dominican friary located in the centre of Ghent. It was built during the 13th century and its restoration began in 1971, lasting until 1991. From 1963 onward, the building has belonged to Ghent University. It is mainly used as a conference centre, but also holds a number of remarkable collections of various departments.
Conference dinner at Gravensteen

The conference dinner will be held on Monday evening 12 September 2016 at the Gravensteen Castle, which is one of the most historic places in Ghent.

The Gravensteen (meaning ‘Castle of the counts’) was built in 1180 by count Philip of Alsace. The castle served as the seat of the Counts of Flanders until it was abandoned during the 14th century. It was later used as a courthouse and a prison, but eventually decayed. Houses were built against the walls and even on the courtyard, while the wall stones were used to erect other buildings. In 1885, the city of Ghent bought the castle and started a renovation project. The newly built houses were removed and the walls and dungeon were restored to their original condition.

The Gravensteen castle is still partly surrounded by a moat. Inside is a museum with various torture devices (and a guillotine) that were historically used in Ghent. BBC drama series The White Queen, set in the 15th century, was partly shot inside and outside the castle, with the moat shown in several scenes. The castle was also used for the 2015 movie Emperor, starring Adrien Brody.
Keynote addresses
Breaking bilingual education rules

Jon Andoni Duñabeitia
(Basque Center on Cognition, Brain and Language)

For decades, bilingual schools have tried to avoid language-mixing in the context of a given academic subject, while promoting code switching across lessons or classes. This “one subject - one language” rule emerges as an educational response to the baseless assumption that language-mixing could be detrimental for concept acquisition and consolidation. In fact, bilingual schools are not radically different from monolingual schools in which just one language is used, with the only difference that this language may change from one subject to another (i.e., a sequence of monolingual lessons). However, as I will present in this talk, recent studies suggest that mixing languages within a lesson could be beneficial for learning, and that the simultaneous use of bilinguals' two languages within the context of a given academic subject does not yield any specific detriment. This issue will be discussed in depth in the current talk by presenting evidence from a series of behavioral and EEG studies testing monolingual and bilingual concept acquisition and retrieval in adults and children with different degrees of proficiency in their two languages.
Neural bases of language learning and expertise

Narly Golestani
(University of Geneva)

I will describe our work on language and the brain in healthy adults, where we have shown that individual differences in foreign speech sound learning are accompanied by both functional and structural brain differences. I will also describe results of structural imaging studies in phonetics experts, which provide evidence for experience-dependent structural plasticity, but also for brain structural features that likely predate the expertise training. Last, I will present functional imaging results on a higher-level, executive multilingual task: simultaneous interpretation. Taken together, our findings suggest that both pre-existing, possibly innate factors and environment influences (learning) play a role in determining the neural bases of language skills at low to high levels of the language processing hierarchy, with different relative contributions in different brain areas.
Switching slows you down. From this perspective, bilinguals engage in a puzzling behavior – often switching languages spontaneously though nothing obvious seems to compel them to do so. As much as intended language switches appear to be effortless and fluent, unintended accidental language switches almost never occur. These points appear to illustrate extremely efficient, indeed nearly flawless, control mechanisms in bilingual speakers. But this conclusion is difficult to reconcile with experimental evidence that reveals highly robust and persistent processing costs associated with language switching.

In this talk I will present data that provide an existence proof that at least some types of language switches are cost-free, while also showing that although bilinguals don’t always discover the most efficient strategy for switching themselves, they can switch for free if cued with one simple instruction. I will then show how bilinguals can be tricked into producing words in an unintended language using a reading aloud task, and data from this task which suggest that language intrusion errors are whole-language selection failures (not single-word switches). Finally, I will discuss data which reveal a largely preserved bilingual language control system in aging, with intact ability to initiate and plan switches, but reduced monitoring abilities.

Together these data reveal a bilingual control system that can operate with suspended control, allowing lexical accessibility to drive language selection, is aided substantially by grammatical encoding mechanisms (though these have largely been ignored in current models of bilingual language processing), and that remains largely, though not completely, independent of general executive control mechanisms.
Symposium

The cognitive effects of bilingualism
It would be difficult to think about any conceivable view of bilingualism that has not at some point been expressed with emphasis: it has been blamed for mental retardation and schizophrenia but also praised for preventing dementia and making people “smarter”. And some authors seem to believe that it is the only mental activity, which does not have any influence on cognitive processes. This presentation aims at explaining how such a variety of opinions came about and how to find a path through the forest of confounding variables surrounding bilingualism research.
Perfect pasta is a simple function of altitude and cooking time: Bilingual advantages in EF are a function of what?

Kenneth Paap
(San Francisco State University)

Even in the published literature null results far outnumber statistically significant bilingual advantages in EF. Recent meta-analyses (Donelly, et al., 2015; Hilchey, et al, 2015; de Bruin, et al., 2015; von Bastian et al, 2015) show a small effect size often in the neighborhood of $d=+$. If confirmation biases and publication biases are considered the average effect size could easily be zero. Furthermore, many statistically significant “bilingual advantages” may be due to confounds with extrinsic variables such as nonverbal intelligence, gender, SES, immigrant status, culture, education, parent’s education, exercise, diet and specialized experiences such as music performance and video-gaming. From a dynamical system perspective such confounds are inevitable as long as the languages one speaks play an important role in determining the opportunities for and the likelihood of success in a society. Consistent with the title of our Cortex article I still suspect that bilingual advantages in EF may not exist and that if they do, they are restricted to unknown circumstances. In my introductory remarks I will address three common counterarguments to this conclusion: (1) that the wealth of null results obtained with young adults should be discounted because most young adults have achieved asymptotic levels of EF development or that performance levels in “simple” Simon, flanker or Stroop-like interference tasks are at ceiling; (2) a related counterargument that the evidence for a bilingual advantage in EF is far more compelling in studies using older adults who presumably have entered a period of cognitive decline; and (3) that there is no reason why bilingual language-control should not enhance EF.
The interaction between bilingual language abilities and cognitive control in adults and children

Esli Struys
(Vrije Universiteit Brussel)

Part of the controversy in the field of bilingualism and cognitive control can be related to a limited understanding of the interaction between specific bilingual language abilities (such as language switching, monitoring, etc.) and cognitive control. Most research on this interaction has focused on language control requirements in mixed-language picture naming tasks with adult participants, largely ignoring development aspects and the interaction between several language abilities (such as understanding language switches) and cognitive control. In this paper, I report on two experiments that may further our understanding of the interaction between bilingual language abilities and cognitive control in adults and children.

In a first experiment, I intended to investigate the interaction between understanding (instead of producing) language switches and cognitive control performance. Young adult unbalanced bilingual participants completed a mixed-language semantic categorization task and a widely used non-verbal cognitive control task. Unlike in mixed-language production tasks, no interaction effect between the factors of language and switch was detected on the mixed-language semantic categorization task. Despite the absence of this interaction effect, individual forward switch costs (switching into L2) and the asymmetry between backward (switching into L1) and forward (switching into L2) switching costs were highly correlated to global response times on the Simon task.

In a second experiment, I intended to investigate the interaction between fluency in language switching and cognitive control performance in children, adding a developmental approach to previous research. Eleven-year old children completed a verbal fluency task in three conditions (two single-language and one mixed-language) and a widely used non-verbal cognitive control task. Mixed-language costs in verbal fluency were calculated by subtracting performance on the single-language conditions from performance on the mixed-language condition. Mixed-language costs turned out to be highly correlated to performance on incongruent trials of the Simon task, but in the inverse direction as with adult participants.

The results of both experiments show the importance of understanding the developmental aspects of the interaction between bilingual language abilities and cognitive control. First, this interaction may not be restricted to language-production tasks. Second, this interaction may be different for children and (young) adults. The implications of these results are discussed in light of the ongoing controversy in the field of bilingualism and cognitive control.
Beneficial or not: The bilingual experience unravelled

Evy Woumans
(Ghent University)

The bilingual cognitive advantage is a much debated research topic, one which has reached very high levels of controversy. In one camp, we find the labs that continue to find evidence supporting the bilingual advantage hypothesis. In the opposite camp, we find those who have never found anything remotely pointing into the direction of an advantage, no matter how many subjects they test. Our own lab is part of the former, and has determined that bilingualism can have a beneficial impact on cognition in people of all ages, going from five-year-olds to senior patients with Alzheimer’s disease. We will discuss five studies on the topic.

In a first study, we set up a longitudinal field design among two groups of 5-year-old children to determine how acquiring a second language influences cognitive development. One group attended monolingual kindergarten, whereas the other was enrolled in an L2 immersion programme, with L2 instruction for 50% of the time. Both groups were matched at baseline (before L2 immersion started) for both cognitive and linguistics skills. We found that after a year of schooling, the immersion children actually gained IQ points, while the monolinguals did not. A second study, also conducted among children, was aimed at identifying the role of second language (L2) exposure. We recruited younger (circa age six) and older (circa age eleven) monolingual and bilingual children. Results showed no sign of any advantage for the younger bilinguals, who had had about five to six L2 exposure, but an apparent advantage for the older bilinguals, who had had about ten to eleven years of L2 exposure; indicating that L2 exposure affects cognition.

In a third and fourth study, we set out to determine how specific bilingual experiences, such as language switching frequency/proficiency and interpreter training, contribute to cognitive skills. We found that only bilinguals who report frequent language switching and interpreters display the bilingual advantage. We also discovered a correlation between language switching proficiency and conflict resolution skills. In the fifth and final study, we compared the onset and diagnosis age of Alzheimer’s disease in a non-immigrant bilingual and monolingual patients and found that disease manifestation is delayed with 4-5 years in bilinguals.

From this we deduce that the existence of a bilingual advantage is very conceivable, but that its magnitude is very much dependent on bilingual experience. This could explain why some labs find it and others do not.
Oral presentations
Talk session 1
Sentence processing
Reanalysing object gaps in non-native sentence processing: Evidence from ERPs
Anna Jessen and Claudia Felser
(University of Potsdam)

Sentences containing displaced constituents (“fillers”) incur greater processing cost than canonically ordered sentences. According to the Active Filler Strategy (AFS), readers try to link a filler to the first potential gap that they come across [1]. Findings from behavioural studies indicate that the AFS is also applied in L2 processing [2]. There is evidence that L2 comprehenders have more difficulty recovering from initial misanalysis than L1 comprehenders, however [3]. To investigate whether L1 and L2 comprehenders process temporarily ambiguous filler-gap sentences similarly, we carried out an ERP study with L1 and L2 speakers of English.

We compared 19 English L1 and 20 high proficient L2 (L1=German) speakers’ brain responses to sentences like (1), manipulating the plausibility of the filler as a direct object of the verb.

(1) Jill loved the cake/dog that Sam baked some decorations for __ during his break.

Whilst the cake is a plausible object of the verb bake, the dog is not. Application of the AFS would lead to the cake/dog being first analysed as the direct object of the verb bake, resulting in plausibility effects (implausible > plausible) at the verb. Encountering the postverbal NP some decorations however indicates that the filler cannot be the direct object of bake, and the need for reanalysis is further confirmed by the preposition for signaling the presence of the real gap. If our plausibility manipulation affects reanalysis difficulty, we should see reverse plausibility effects (plausible > implausible) at the preposition.

Forty-eight experimental items and 108 fillers were presented visually word-by-word.

Both groups showed negativities at the verb for implausible fillers, with smaller and more short-lived effects in the L2 group. At the preposition, only the L2 group showed a P600 effect for the plausible condition, whereas the L1 group did not show any effects at this point.

Our results confirm that both L1 and L2 processing of filler-gap dependencies is guided by the AFS. The L1/ L2 differences observed following the disambiguating preposition however show that L2 comprehenders have more difficulty revising their initial analysis than L1 comprehenders. Our findings indicate a reduced ability to change previously built sentence representations in L2 compared to L1 processing.

References
Task sensitivity in L2 sentence comprehension: Evidence for ‘good enough’ processing

Maryann Tan and Anouschka Foltz
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Clahsen & Felser (2006) have suggested that L2 sentence processing lacks syntactic depth and L2 learners rely predominantly on lexical-semantic cues to interpret sentences. Evidence comes, for example, from attachment preferences for structures such as The sister of the actress who shot herself on the balcony was terribly depressed, where the relative clause (RC, who shot herself on the balcony) can either attach high (to NP1: the sister) or low (to NP2: the actress). Contrary to native speakers, L2 learners’ lack of preference for either high or low attachment has been taken as evidence for shallow syntactic processing.

However, native-speakers may also engage in shallow syntactic processing if this is “good enough” for the current task (cf. Ferreira et al., 2002). This study—modelled after Swets et al.’s (2008) L1 English study—examines the processing strategies of native Chinese speakers reading L2 English. Participants read sentences (see (1)) in a self-paced reading paradigm. One group of participants received comprehension questions probing the interpretation of the RC (e.g. Did the actress get shot?); the other group received questions that required only a superficial understanding of the sentences (e.g. Was there an investigation?).

(1a) Ambiguous:

The sister of the actress who shot herself on the balcony was under investigation

(1b) Disambiguated to NP1:

The brother of the actress who shot himself on the balcony was under investigation.

(1c) Disambiguated to NP2:

The brother of the actress who shot herself on the balcony was under investigation.

Participants in the RC-question group read ambiguous sentences faster than disambiguated sentences, where they consistently slowed down at the reflexive pronoun (see Figure 1, Region 4). Participants in the superficial-question group read ambiguous and disambiguated sentences equally fast and read them faster than participants in the RC-question group.

The results are consistent with the “good enough” approach and its underlying principle of Online Cognitive Equilibrium (OCE, Karimi & Ferreira, 2015). The OCE suggests that a processor seeks to achieve a state of cognitive equilibrium as quickly as possible by merging NP1 and NP2 as one NP to which the RC refers. Encountering a disambiguating pronoun disrupts equilibrium, forcing the processor to break up the referenced entity to resolve the sentence’s meaning. However, this cognitive effort is only made when the goal of comprehension demands so. The results suggest that L2 learners optimised cognitive resources in sentence comprehension according to task demands.
References


One of the hallmarks of academic texts is complex noun phrases (CNP) like *pharmaceutical market size increase*, which are composed of a head noun plus modifiers [1]. If the parts of the CNP are introduced in preceding text (i.e. discourse expectation created), this NP can be shorthand to convey complex ideas. If they have not been introduced (i.e. no discourse expectation), the meaning of the CNP is less obvious.

In the present study, we investigated whether CNPs that are not introduced lead to processing difficulty during real-time reading, following findings that discourse expectations influence processing in other domains [2]. We predicted that CNPs would be harder to process than structures that break the modifiers into shorter units, and that this would be more pronounced for longer structures.

Eye-tracking while reading was used with 2 groups of L2 speakers of English: native speakers of German (a language that uses CNPs); and native speakers of other languages not uniform in their CNP use. We predicted that German speakers would have less difficulty processing CNPs than other-language speakers due to more experience processing CNPs.

Two variables were tested. *Structure*: containing a complex noun phrase (NP) or the equivalent structure with modifiers expressed as prepositional phrases (PP). *Words*: the number of words in the CNP: either four (Four) or six (Six). Four sentence segments were analyzed: Critical, Post-Critical, Spillover, and Final.

First Pass reading times in the Spillover region were significantly longer in the NP compared to PP condition for both groups. In the Final region, First Pass reading times were significantly longer in the Six than the Four condition for both groups, and the difference was significantly greater for PP than for NP trials. Effects were similar but earlier for Total Duration reading time.

Results largely confirm our hypotheses: CNP structures are more difficult to process than PP variants, and this is more pronounced in longer structures. Further, longer structures are more difficult to process than shorter ones. This provides evidence for processing difficulty in L2 speakers while reading structurally complex sentences in English. No evidence of L1 parsing strategy transfer (CNP processing in German) to the L2 was found. Currently, our hypotheses are being investigated further by comparing native speakers of English and several groups of L2 speakers with varying CNP usage.

References


Syntactic conflict between languages in second-language sentence processing: An ERP study

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When adults learn a second language (L2), one obstacle to high proficiency is to acquire syntactic structures that stand in direct conflict with those of one’s native language (L1). This may especially be the case for L1-L2 combinations of highly related languages, where cross-language transfer is not only an obvious, but also a generally successful strategy. As an instance of such a syntactic conflict between highly similar languages, we investigated how German learners of Dutch processed sentence-final double infinitives as in “Ik heb de vaas laten vallen” (literally ‘I have the vase let fall’), which in German would be expressed with a reversed order of infinitives (“…fallen lassen”). Additionally, we tested in a cross-sectional fashion how processing of these structures develops across L2 acquisition. To this end, we presented correct (“…laten vallen”) and incorrect, but ‘German-like’ (“…vallen laten”) versions of these sentences to three groups of German students in the Netherlands, who were at different stages in their L2 Dutch acquisition process: those who had just completed an intensive five-weeks language course; and two groups that had been immersed in a Dutch environment for a varying length of time (six vs. 18 months). A control group of native speakers of Dutch was also included. Participants read the Dutch sentences and made grammaticality judgments while their EEG was recorded. If (especially beginning) learners experience a conflict between German and Dutch syntactic rules in these sentences, we should observe a different ERP signature than for word order violations of a syntactic structure that is compatible between Dutch and German (subordinate clause inversion).

Even though accuracy in the grammaticality judgments was comparable between L2 groups, the observed ERP patterns changed as a function of length of immersion. While beginners showed a broad and extended N400-like effect and no P600 for incorrect (‘German-like’) sentences, this pattern changed towards a reduced N400 and a larger, earlier, but not quite native-like P600 the more advanced the group was. ERP effects were native-like for the control structure in the two advanced, but not in the beginner group, which also showed a N400 in that condition.

Results indicate that conflict between word order rules in L1 and L2 does indeed remain an obstacle to native-like processing in more advanced L2 learners. In contrast, even with already high behavioral syntactic competence, beginning learners seem to apply different neurocognitive mechanisms in L2 syntactic processing in general, regardless of L1-L2 conflict.
Talk session 2

Morphosyntax and speech
Form and function in the multilingual mind: The L2 English influence on Chinese learners’ L3 Swedish definiteness markers

Anders Agebjörn (University of Gothenburg) and Frida Splendido (Lund University)

Research on second language (L2) acquisition of articles has focused on their function and on the form of the noun phrase (NP). Previous studies on third language (L3) acquisition have investigated language combinations where a certain category is functionally and formally similar in two of the learner’s three languages, trying to define the degree of influence from the first language (L1) and L2 on the L3. For the acquisition of definiteness, positive L2–L3 influence has been reported (Jaensch 2009). The present case study investigates the acquisition of obligatory definiteness in a language combination where the category is absent in the L1 but present in both L2 and L3, filling the same function albeit being expressed through different forms.

Unlike Mandarin, English and Swedish obligatorily mark definiteness and indefiniteness through articles. However, whereas English articles are pre-nominal, the Swedish definite article is a suffix. In addition, Swedish has a pre-adjectival definite article, yielding the redundant double definiteness construction: den röda bil-en ‘DEF red car-DEF’. Examining Mandarin-speakers’ use of articles in L2 English and L3 Swedish, this study aims at disentangling grammatical form and function in the multilingual mind.

Four intermediate Mandarin-speaking learners of Swedish (CEFR level B2), with prior knowledge of English (B2–C1), participated in this pilot study. A production task was designed to elicit approximately 40 NPs (definite/indefinite, modified/non-modified). The learners’ production of English and Swedish was tested in different sessions separated by a week. Control data were collected from native speakers of English and Swedish (n=2x8).

Preliminary results indicate rare but existent errors in English (L2) article production. In the Swedish (L3) data, function errors (indefinite forms in definite contexts and vice versa) are scarce, whereas form errors – both overuse of the pre-adjectival article and omission of the suffix – occur frequently, e.g. den djur ‘DEF animals’ (target: djur-en ‘animal-PL/DEF’). As expected, a more proficient use of articles in English coincides with more form errors in Swedish, and the only learner committing function errors in English also makes such errors in Swedish. Consequently, the L2 English influence on L3 Swedish article production appears positive for function but negative for form.

References

Implicit learning is an important mechanism of language acquisition and processing. Although having empirical evidence that adults can to some extent acquire morpho-syntax in a second language implicitly (Williams, 2005; Rebuschat & Williams, 2012), we still do not know what factors contribute to successful L2 learning via the incidental mode.

In an experiment, we exposed 80 adult native English speakers without previous knowledge of a Slavic language or advanced knowledge of a language with grammatical gender, to a complex noun-adjective agreement pattern as a function of number, gender and case in the Russian language under a baseline comparison explicit learning and three incidental learning conditions.

Frequency was manipulated in the incidental learning conditions during training. In these conditions - low type low token, high type low token, low type high token frequency - participants viewed pictures and read for meaning Russian sentences containing agreement in singular and plural, masculine and feminine genders and four cases (nominative, dative, instrumental, and genitive) presented on the computer screen, whereas in the explicit learning condition participants received metalinguistic information about the rule. We used response times and accuracy and comprehension and production post-tests to investigate the level of receptive and productive knowledge retention. Participants’ working memory capacity was measured using Operation and Reading Span tasks (Unsworth et al., 2005).

The data were analyzed using Generalized Linear Mixed Models. In comprehension, adults performed significantly better in the high type low token frequency incidental learning condition than in the explicit learning one. In production, explicit learning mode was more effective; at the same time high token frequency condition outperformed all other incidental learning conditions. No relationship with working memory in either production or comprehension was found.

The results will be discussed within the usage-based approach to second language and will account for the effects of frequency and working memory on the acquisition of receptive and productive knowledge of a complex grammar rule in a novel L2 via incidental exposure.
Elucidating the underlying mechanism of syntactic co-activation: Are rules simply co-active, or are they fully interactive?

Awel Vaughan-Evans, Guillaume Thierry, and Manon Jones
(Bangor University)

Recent evidence shows that bilinguals’ grammatical systems are co-active, to the extent that the morphosyntactic rules of the non-operational language are co-active during sentence comprehension, even if they do not exist in the operational language. It remains unknown however, whether the grammars of each language are simply co-active, or whether the rules of one language are integrated into the syntax of the other language. We recorded event-related brain potentials (ERPs) whilst 22 Welsh-English bilinguals read English test sentences ending in mutated nonwords, created by implementing an initial consonant change consistent with the Welsh morphosyntactic rules of soft mutation (e.g. carrot → garrot). We also manipulated the preceding sentence context such that the soft mutation rule could be activated via triggers that could be operationalized in both the non-operational language (Welsh; the language to which the rule belongs) and the operational language (English; the language to which the rule does not belong), or via triggers specific to the operational language. ERP modulations were consistent with the latter hypothesis: Mutated nonwords were detected as appropriate completions when preceded by triggers specific to the operational language (English), even though the soft mutation rule does not exist in English. These results suggest that the morphosyntactic rules of the non-operational language are co-active, and can be integrated into the syntactic system of the operational language. Overall, our results show that syntactic co-activation is a fully interactive process.
The present study uses cross-linguistic differences in agreement rules to examine the influence of the speaker’s mother tongue on noun phrase production. It asks whether highly proficient bilinguals recruit the same or different procedures than native speakers during the phonological encoding process. To this end, it compares the production of French determiner + noun utterances (e.g., le chat ‘the cat’) by French native and German-French bilingual speakers. Previous studies using this type of utterances reported stable differential patterns of monolingual performance across languages. In Germanic languages in which the gender of the determiner depends on that of the noun (e.g., German), response latencies to name pictures with a superimposed written distractor using a determiner and a noun are longer when the distractor and the noun differ in gender (Schriefers, 1993). By contrast, in Romance languages in which the form of the determiner also depends on the phonological properties of the noun, previous attempts to detect gender congruency effects in the same experimental conditions have failed (Miozzo & Caramazza, 1999). According to Caramazza et al. (2001) there is no gender congruency effect in these languages because determiner selection is delayed until the noun’s phonological properties are available. The differential effect of gender congruency across languages thus suggests that speakers of Germanic and Romance languages apply encode determiner noun phrases using a different time course.

In the present study, German-French bilingual participants and French monolingual participants named pictures using a definite determiner and corresponding French noun (e.g., le chat). A gender congruency effect was observed for late proficient German-French bilinguals but not for French native speakers, suggesting that late highly proficient German-French bilinguals encode determiner noun phrases in their L2 using the same time course as in their native language rather than adopting the time course used by French native speakers.

References


Talk session 3

Executive functions
Bilingualism is associated amongst others with a) a smaller lexicon size in each language and b) an advantage in executive functions (EF) – since constant coordination of the two languages trains general executive functions (Bialystok, 2010). But recently, the criticism on the so-called bilingual advantage increased, due to frequent shortcomings in study designs and failure in replicating positive results (Paap & Greenberg, 2013). An unanswered question is still, if bilingual children’s possible advantage in EF is reflected in school performance: we hypothesize that despite missing group differences in EF, the influence of EF on school-related abilities, like reading and spelling, is stronger for bilinguals.

We investigated this question in a large, heterogeneous sample of German 3rd-graders. The situation of bilinguals in Germany in general is characterized by less academic success, lower socio-economic status (SES) and lower German skills compared to monolinguals (Chudaske, 2011). Our sample consisted of monolinguals (n=109) and bilinguals (n=47), who performed three EF-tasks (go/nogo, n-back, bivalent shape task) and standardized tests for spelling and reading. Further potential background variables were investigated with a questionnaire (i.e. SES, gender) and standardized tests for lexicon size, intelligence and phonological awareness.

We found no group differences in school-related abilities and executive functions, but bilinguals had significantly smaller lexicon size compared to monolinguals. Preliminary results from linear regression models revealed lexicon size as the most important predictor for reading and spelling skills in bilinguals. We found greater impact of EF for reading and spelling abilities in monolingual than bilingual children. Further analyses are ongoing.

So far our data do not support a bilingual advantage in EF, but they suggest that bilingual children can compensate their disadvantages in lexicon size, since their performance in reading and spelling is comparable to monolingual children.

References


Bilingualism is found to affect executive functions (Bialystok, 2012), but the origins of this modulation are unclear. Therefore it is necessary to pin-point which executive functions are influenced by which aspects of bilingualism. This study investigates the differential impact of code-switching types on two executive mechanisms, inhibition and conflict-monitoring. The following three code-switching types have been described (Muysken, 2000) and are listed in order of decreasing inhibitory involvement and increasing conflict-monitoring involvement, according to psycholinguistic models (Treffers-Daller, 2009; Green & Wei, 2014): (1) alternation of structurally independent stretches from both languages, (2) insertion of lexical items from one language into the grammar of the other, (3) dense code-switching mixing co-activated lexicon and grammar. During alternation languages are kept mostly separate, so alternation is predicted to enhance inhibition most, but conflict-monitoring of co-activated schemata least. To test this prediction, 44 German-English adult bilinguals with middle-class-SES immersed in an L2-English-speaking context in Greater London were administered a flanker task designed to assess inhibition and conflict-monitoring. The flanker task contained a low-monitoring condition requiring little congruent-incongruent trial-switching (92% congruent - 8% incongruent) and a high-monitoring condition requiring constant switching (50% congruent - 50% incongruent). Conflict-monitoring is challenged most by the high-monitoring context, whilst inhibitory effort is greatest in the low-monitoring condition as inhibitory schemata are least activated (Costa et al., 2009). Participants’ linguistic profiles and code-switching habits were assessed in questionnaires, as well as frequency judgment tasks. A stepwise regression with IQ, age, immersion, working memory, education, proficiency, balance, age of onset and frequency of each code-switching type entered as predictor variables and inhibitory performance in the low-monitoring condition as the outcome variable identified frequency of alternational code-switching as the best predictor explaining 16% of the variance \( F(2,42)=7.6, r=+0.4, p=0.007 \). Conflict-monitoring performance was best explained by a model \( F(3,40)=7.4, p<0.001 \) comprising the predictors IQ \( r=+0.42 \), alternation \( r=+0.3 \) and duration of immersion \( r=+0.39 \). In line with predictions derived from existing models, alternation therefore correlates positively with inhibitory performance in the most challenging condition, but negatively with the ability to manage co-activated task-schemata.

References


Bilingualism and multilingualism is becoming the norm and not the exception in today’s pluralistic societies. It is widely accepted that bilingualism provides a number of cognitive advantages, such as better executive control and attention, better problem-solving abilities, better meta-linguistic awareness (Bialystok, 2009). The effects of bilingualism on language competence are less clear, however. The evidence we have from research suggests that literacy skills acquired in the context of one language can transfer positively to another language (Bialystok, Luk & Kwan, 2005). This is a question we set out to investigate in an experimental study of performance on tasks involving the two standard written languages in Norway, Bokmål and Nynorsk, both of which are present in the media, at schools and elsewhere in the public sphere. The Norwegian language situation is characterized by multiple diglossia, both at the level of the written language (through Bokmål and Nynorsk), and at the level of the spoken language (by multiple dialects). Still, many aspects of this situation remain largely understudied. Since Bokmål and Nynorsk are highly similar variants of Norwegian we also sought to study whether the two varieties are really processed by the brain as two linguistic codes, as in the case of other bilingual language processing, or one only code.

We used a cross-language primed lexical decision task where participants encountered target words in Bokmål paired with primes in Nynorsk, and target words in Nynorsk with primes in Bokmål. Each prime-target word-pair could fall into one of the following categories: related form with stem change (eg. melk-mjølk), related form with morphological change (eg. kvikkhet-kvikkleik) or unrelated form with the same meaning (eg. spice-ete). We found bidirectional priming effect for Bokmål and Nynorsk; however, Bokmål primes aided the recognition of Nynorsk words by decreasing the response time for Nynorsk target words more than the other way around. That is, Nynorsk primes did not have the same magnitude of effect on Bokmål targets. This asymmetric cross-linguistic priming effect has been described in the literature in non-proficient L2 speakers. These results suggest that the two written varieties of Norwegian are processed as two linguistic codes.

References


Executive control network in monolinguals and bilinguals: A structural equation modelling approach

Beinan Zhou (University of Oxford) and Andrea Krott (University of Birmingham)

The effect of bilingualism on speakers’ executive control ability has been intensively investigated and discussed in the past decades. Recent replication failures have sparked off the debate whether bilingualism leads to cognitive advantage (Bialystok et al., 2015; Valian, 2015). Part of the concern is that most studies have investigated the effect of bilingualism on a subset of the executive control network and most of them with a single task measurement. The impurity of executive function tasks is well known (Rabbitt, 1997), limiting the interpretation of results and the generalization of findings.

The present study aims to address these issues by investigating the executive control network as a whole, not just a sub-function. Also, in order to circumvent the task impurity problem, a latent variable approach is adopted, which allows comparing participants’ performance at a latent factor level instead of a task level.

Hundred monolingual English speakers and 100 bilingual speakers of English and another language (matched for social and economic background and IQ) were tested on the 9 executive control tasks used by, for instance, Friedman et al. (2008), to tap into each of the 3 sub-functions of the executive control system: inhibition, shifting and updating (as defined in Miyake et al., 2000). Confirmatory Factor Analysis (CFA) showed that the executive control networks of the two groups were organized similarly. Both networks were captured well with a two-factor model, i.e. a shifting factor and a common executive control factor (common EC). Model invariance analyses suggested that the two groups differed with regard to the factor mean for the shifting factor, with bilinguals having a higher score, thus better shifting ability. There was no difference with regard to the common executive control factor, which subserves the function of attentional control, updating and inhibition. Also, factor covariance was descriptively higher for bilinguals than for monolinguals, implying a more correlated executive control network for bilingual speakers.

In conclusion, we found that the organization of the executive network was not fundamentally different for the two participant groups. But bilinguals showed better shifting ability and a more strongly correlated network than monolinguals, in line with evidence for enhanced bilingual neural connectivity (Mohades et al., 2012; Garcia-Penton et al., 2014; Grady et al., 2015).

References


Talk session 4
L2 learning and memory
Memory for texts in the first and second language

Heleen Vander Beken and Marc Brysbaert
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With academic internationalisation at full speed, English is increasingly used as a medium of instruction in higher education and students often go abroad. The question arises whether students remember texts in a second language as well as in a first language.

Background: Bilingualism research generally assumes that meaning is stored language-independently, though this was not tested on the text level. Nevertheless, there is accumulating evidence in favour of language-specificity in word list recall (Watkins & Peynircioglu, 1983), listening comprehension (Marian & Fausey, 2006), and autobiographical memory studies (Marian & Neisser, 2000).

First study: The first study consisted of a true-false judgment task (recognition) and a free recall task (reproduction) measuring immediate recall of short expository texts in L1 and L2 (between-participants). In addition, proficiency, working memory, and reading motivation were tested to match participants (N = 195).

Results: Results show worse test scores in L2. Nevertheless, this effect is mediated by test type: L2 recognition test results barely differ from those in L1 (see Fig 1), while there is a large effect on recall (d = .86). So, either L2 production is worse, but L2 memory is not, or L2 recognition memory loss is higher on the long term but not on immediate tests. In both cases, these results are practically relevant to examiners in higher education.

Second study: Using the same, fine-tuned materials, participants (N = 200) were presented an immediate recognition task and a follow-up recognition test after 1 day, 1 week, or 1 month in two languages. Repetition or test effects were controlled for with parallel versions of the materials. Proficiency and IQ-measures will be used to compare groups. Memory curves will give us an insight on memory loss for texts in L1 and L2.

Fig 1. Mean percentage of recalled ideas in all conditions with 95% confidence intervals

References


Noticing the gap: Does being aware of what you don’t know aid L2 word learning?
Johanna de Vos, Herbert Schriefers, and Kristin Lemhöfer
(Radboud University Nijmegen)

‘Noticing the gap’ (NTG) is a concept in the field of second language acquisition, occurring when L2 learners become aware of discrepancies (‘gaps’) between their own L2 language system and the target language system. NTG is supposedly triggered when one tries to produce L2 output but fails due to lack of knowledge, and is often claimed to be beneficial to the learning process (e.g. Swain, 1995, in Cook & Seidlhofer).

However, this claim mainly seems to be supported by theoretical rather than empirical evidence. Only two studies have experimentally investigated NTG with regard to word learning, both of them taking place in classroom contexts and focusing on written words (Kwon, 2006, PhD thesis, Univ. of Florida; Mahmoudabadi et al., 2015, Intern. Journ. of Asian Soc. Sci.; only the latter reports a significant effect). The present study is the first to situate the research on NTG in a natural listening situation with purely spoken input; in fact, the kind of situation L2 learners would often find themselves in when living abroad and acquiring language ‘in the wild’.

Participants were 70 German students living in the Netherlands. Uninformed of the language learning aspect of the study, they signed up for an experiment about ‘making price comparisons’. NTG was induced by letting the experimental group name and compare rare objects in Dutch; in later interviews these participants confirmed they had noticed gaps in their vocabulary. The control group regarded the same objects in silence. Nevertheless, about half of the participants in this condition later said they had noticed gaps. Therefore, these participants were analysed as a separate (third) group.

After the NTG manipulation all participants were exposed to the unknown objects’ names in a listening task with a native Dutch speaker. Word learning was measured through a picture-naming post-test. While overall scores were low, the results reveal that participants who had noticed gaps learnt significantly more words than participants who had not (M=17%), although it did not matter whether they had noticed these gaps while naming objects out loud (M=28%) or in silence (M=26%). Thus, this study contributes to moving NTG from the theoretical to the empirical realm, and adds weight to the long-standing hypothesis that noticing the gap has a role to play in L2 word learning.
Learning from natural L2 input: The acquisition of grammatical gender in a foreign language

Annika Brandt, Kristin Lemhöfer, and Herbert Schriefers
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One remaining mystery in research on second language acquisition is why even learners who are intensively exposed to the second language (L2) reach a point after which they fail to use this natural L2 input to further improve their language skills. Rather than reaching native-like proficiency, they often show persistent errors, a phenomenon which has also been referred to ‘L2 fossilization’.

The current study aimed at a better understanding of the conditions under which L2 learners benefit from natural corrective L2 input. The target group consisted of German learners of Dutch. These tend to transfer the grammatical gender of their L1 to the L2, leading to persistent errors in the L2 (Lemhöfer, Schriefers, & Hanique, 2010, Acta Psych.). To test the effect of corrective feedback on grammatical gender errors under rather natural, but experimentally controlled conditions, we employed Branigan, Pickering, and Cleland’s (2000, Cognition) confederate scripting technique to create a simulated dialogue-game. In this game, participants and a virtual interaction partner took turns describing cards to each other. While one was describing a card, the other was instructed to identify it among various options. For this first exploratory study, participants were not really interacting with a partner, but received input via voice recordings of a native Dutch speaker. During the entire experiment, there was no explicit focus on L2 acquisition.

We tested whether initial gender errors in gender-marked determiner-noun phrases would be corrected after hearing the ‘interaction partner’ use the correct phrase. Furthermore, the number of intervening trials (lag) between corrective input and the second output moment was manipulated. Results indicate that error rates of grammatical gender decreased significantly after one instance of correct L2 input per noun, while no such decrease was observed in a control condition with no corrective feedback. Lag size did not affect learning rates.

However, the task in this first experiment was easy enough to lead to some participants’ suspicion that the experiment was really about grammatical gender. To assess learning effects under more truly incidental learning conditions, results will be compared to those of a currently conducted second experiment with a more implicit, seemingly L2-unrelated memory task.

Besides gaining new insights into natural L2 learning, this research demonstrates the suitability of the scripted confederate technique as a paradigm to study these learning processes.
How new L2 words become memories: Lexicalization in advanced L1 Dutch learners of L2 English

Merel Keijzer and Mariia Chepela
(University of Groningen)

It is an undisputed fact that learning – and remembering – new words is key in successful second language acquisition. And yet researching how vocabulary acquisition takes place is one of the most difficult endeavors in second language acquisition. We can test how many L2 words a learner knows, but do not know how these items were actually acquired (Cook, 2012).

From L1 learning, we know that sounds can be “fast mapped” to meanings: in less than 14 minutes of passive listening to new words, neural response patterns emerge that mirror responses triggered by existing words (Shtyrov et al., 2010). The work by Gareth Gaskell and colleagues (cf. Gaskell & Dumay, 2003) has shown, however, that such rapidly formed word memories are subserved by distinct neural substrates. Only after a post-learning consolidation period, typically involving one night’s sleep, are novel words fully integrated into the existing lexicon. The most convincing evidence for this lexicalization process stems from new words competing with their lexical neighbors after the consolidation period, witnessed in longer response latencies to existing words similar in form (see also Bakker et al., 2014). It has been suggested that the speed of lexicalization depends on how many languages a person knows (Bakker et al., 2014). And yet, the question if this consolidation period works similarly in second language learners has not yet been directly investigated.

This paper reports an L2 word learning and consolidation study that uses Gaskell & Dumay’s (2003) design and nonsense word list, but applies it to English university majors (whose L1 is Dutch). Two experiments are reported: in the first 37 students were tested over the course of one week, similar to what had been done in Gaskell & Dumay (2003). The increase in response latencies to existing words in a lexical decision task was not duplicated. In a follow-up experiment we further explored whether the L1 vs. L2 word learning was a qualitative difference or whether L2 learners simply need more time. We tested 23 (different) English major university students and tracked them over the course of two months with weekly test sessions. This latter experiment is ongoing. The full results will be discussed during the conference. Collectively, these outcomes pertain to L2 theorizing on how vocabulary is acquired and stored.
What can proactive interference tell us about the cognitive architecture of bilingual lexico-semantic memory?

Lize Van der Linden (Université catholique de Louvain), Wouter Duyck (Ghent University), Marie-Pierre de Partz (Université catholique de Louvain), Eleonore Smalle (Université catholique de Louvain), Morgane Simonis (Université catholique de Louvain), and Arnaud Szmalec (Université catholique de Louvain)

Most studies so far on the bilingual lexico-semantic architecture used the priming paradigm to investigate how representations of different languages interact. This sometimes led to contrasting findings, raising the question whether cross-language lexical and semantic priming effects may also be driven by strategic behavior rather than reflecting the organization of bilingual memory (Witzel & Forster, 2012). The current study proposes to re-examine this issue by using a memory-based approach in which cross-language activation causes proactive interference and therefore, in contrast to the facilitative effect of priming, has an adverse effect on task performance. More precisely, we propose the use of lure interference in the 2-back paradigm (e.g., dog–house–fork–dog is a 2-back lure trial because dog is not in target 2-back position). Szmalec, Verbruggen, Vandierendonck, and Kemps (2010) showed that semantically related lures can adversely affect 2-back recognition performance (e.g., cat–house–fork–dog), illustrating that activation spreads across the semantic network, causing interference during recognition of newly presented, semantically related words. In 6 experiments, we tested highly proficient French-Dutch bilinguals on their sensitivity to lure trials to investigate how semantic and lexical representations of bilinguals are organized. In Experiments 1-4, semantic within-language (e.g., dog–house–fork–cat) and cross-language lures (e.g., cow–house–fork–paard) were used. We observed semantic activation both within L1 and L2, but not across languages. In Experiments 5-6, we observed lexical cross-language activation through translation lure effects (e.g., horse–house–fork–paard) in both language directions. We also showed that the overall strength and direction (from L1 to L2 or vice versa) of semantic and lexical activation depends on the level at which items are activated in bilingual memory. We discuss the implications of these findings for existing models of bilingual lexico-semantic memory.

References


Talk session 5
Monitoring and control
Monitoring in multiple modalities in the first and second language

Wouter P. J. Broos, Wouter Duyck, and Robert J. Hartsuiker
(Ghent University)

Previous research has shown that language processing in a second language (L2) is slower than in a first language (L1) regarding auditory word recognition (Lagrou, Hartsuiker, & Duyck, 2011) and speech production (Ivanova & Costa, 2008). Since differences are found in these processes, it stands to reason that monitoring between L1 and L2 speakers differs as well. The main aim of the current study was to observe whether differences in monitoring between L1 and L2 speakers are due to aspects of word retrieval, auditory processes, or speech production. Participants performed a picture naming task (naming), an auditory phoneme monitoring task (comprehension), and a phoneme monitoring task in production (production). The naming task revealed that L2 speakers were slower in naming pictures than L1 speakers. The auditory phoneme monitoring task yielded no significant differences between L1 and L2 speakers pertaining to reaction times, which were measured from the word onset. The only main effect was place in that target phonemes that were positioned at the onset of the picture name were reacted to faster than those positioned at the coda. Analyses of the production task showed a main effect of place and syllable number in which monosyllabic picture names were reacted to faster than pictures with disyllabic names. Additional correlational analyses were performed in order to see whether reaction times of one task were predictive of another. L2 speakers showed significant positive correlations between all tasks regarding reaction times (with the exception of the correlation between naming and listening tasks) while L1 speakers only showed a correlation between the production and comprehension task. Importantly, these correlations were still present if proficiency of L2 speakers was controlled for.

References


Is bilingual language control restricted to language tags/schemas? The effect of language practice and language-specific item practice on asymmetrical switch costs.

Mathieu Declerck (Aix-Marseille University) and Andrea M. Philipp (RWTH Aachen University)

Several models have proposed that language control occurs between languages tags/schemas and between lemmas. Yet, most research has solely focused on language control processes between language tags/schemas. In the present study, we investigated whether language control can also occur between lemmas by allowing bilinguals to practice a language or language-specific items prior to a language switching task, and thus change the relative activation of the language or the language and lemmas respectively. By changing the activation levels, relatively more language control should occur for this language and/or lemmas relative to their translation equivalents due to the reactive nature of language control. The results showed that this was all the more so when language-specific items were practiced than when merely a language was practiced. Hence, the current study provides evidence that language control is not restricted to language tags/schemas, but could also occur between lemmas.
One of the most remarkable skills of bilinguals is the ability to use one or the other language according to context. While, it is widely agreed that when the target language is intended the non-target one has to be inhibited, it remains unclear how inhibition is performed. On the one hand, the Inhibitory Control model assumes inhibition to be dominance-related (IC-Model; Green, 1998), on the other hand Bilingual Interactive Activation models assert that inhibition is dominance-reversed (BIA/BIA+ models; Dijkstra & van Heuven, 2002). A way to investigate how inhibition is achieved is by measuring the time it takes to overcome it, i.e. measuring switching costs.

The aim of the present study is to investigate the mechanisms underpinning language switching in bilingual recognition vs. production. To do it, we measure language switching costs in a bilingual recognition and in a production task. If inhibition is dominance-related, greater switching costs for the stronger compared to weaker language are expected. Contrary, if inhibition is dominance-reversed larger switching costs for the weaker compared to the stronger language are predicted.

We tested 32 native speakers of Dutch (mean age: 21.8 years; 5 males) with good proficiency of English (B2-C1 level of the CEFR, L2 mean AoA: 9.3 years) in a lexical decision and a picture naming task involving language switching. All the experimental stimuli were carefully matched according to word frequency, word length, conceptual complexity, semantic category, cognate status, neighborhood size within (Dutch or English) and across languages (Dutch, English, German, Spanish and French). This is the first study comparing switching costs in language recognition vs. production.

Results revealed that in the lexical decision task switching costs were measured in L1 but not in L2, while in the picture naming task, the amount of switching costs for L1 and L2 was the same. These findings not only suggest that language production and language recognition in bilinguals are processed differently, but they also challenge the general assumptions of both the IC and the BIA/BIA+ models. The study will discuss the implications of these results for current models of bilingual language production and recognition.

References


The exact nature of control in bilingual language production remains unknown. In the past, a language switching paradigm (LST) has been widely used to investigate this issue [1]. Slower production of L1 than of L2 (global L1 slowing) and larger switch costs to L1 (switch cost asymmetry) have been interpreted as indicative of L1 suppression during language switching [2]. The goal of the current study was to explore impact of language exposure directly prior to performance of LST on L1 suppression in language switching. 86 unbalanced Polish-English high-school students participated in the study. The amount of exposure to L2 and L1 was manipulated using different versions of a semantic judgment task. The results demonstrated global L1 slowing in all conditions, but the switch costs asymmetry depended on the linguistic context preceding the LST: after exposure to L1, symmetrical switch costs to L1 and L2 were observed whereas after exposure to L2, larger switch costs to L2.

As such, the global L1 slowing seems to be a result of a requirement to keep the two languages active during language switching, and possibly of greater suppression of the language that has higher residual activation. The switch cost asymmetry, on the other hand, appears to be sensitive to subtle changes in the relative activation between the two languages that can be modified by the amount of L2 exposure. Overall, the current study suggests two relatively independent mechanisms of language selection: 1) a top-down control - reflected in the relative difference in L1 and L2 naming times and dependent on a residual level of language activation; and 2) a bottom-up control – reflected by switch cost asymmetries, possibly driven by temporary changes in language activation. The results will be discussed in light of recent discussion on the locus of control processes in language switching [3].

References


Talk session 6
Language control and switching
Stimulus-response binding in language switching
Andrea M. Philipp (RWTH Aachen University), Mathieu Declerck (Aix-Marseille University), and Iring Koch (RWTH Aachen University)

In language-switching experiments, participants have to name an object in one of two languages. When the language switches from one trial to the next, RT and error rate is higher than when participants can use the same language in two successive trials (i.e., language switch costs). The present study examined the influence of stimulus-response bindings on such language switch costs. Whereas each stimulus is associated with both languages in typical language-switching experiments, we used a constant mapping of stimuli and responses (i.e., vocal response in a specific language). More precisely, one set of stimuli had to be named in one language (e.g., German) whereas stimuli of another set had to be named in the other language (e.g., English) throughout several learning blocks. In a final test block, this stimulus-response mapping was reversed so that each stimulus had to be named in the other language. We observed a substantial decrease of switch costs during the learning blocks and an even larger increase in the test block.

In two further experiments, we used stimuli that belonged to semantic categories (e.g. animals vs. fruits) or phonologic categories (e.g. word starting with the phoneme /b/ vs. /k/). That is, in the constant S-R mapping group one category had to be named in one language while the other category had to be named in the other language during the learning blocks. This mapping was again reversed in the test block. Additionally, we either used the same or different stimulus pictures (and thus also responses) in the learning and test blocks. The overall pattern of results was comparable to the basic experiment, replicating the remarkable influence of S-R bindings on language switch costs. Whereas the use of semantic or phonologic categories only had a minor influence on the data pattern, the increase of switch costs due to the mapping reversal was more pronounced when using the same as compared to different stimuli in learning and test blocks. Taken together, these results indicate a relatively specific effect of a binding between stimulus and response rather than between a category and a language.
Multilingual language control and executive function: a replication study

Greg Poarch (University of Münster)

Recent debate about the effects of bilingualism on executive function (EF) has seen an upsurge in null-result findings when comparing monolingual and bilingual populations on non-verbal tasks. Previously, there had been converging evidence of enhanced EF in conflict resolution tasks such as the Flanker task particularly for child and elderly bilinguals compared to age-matched monolinguals (Kroll & Bialystok, 2013). It was assumed that bilinguals’ enhanced EF stemmed from their permanent need to monitor, control, and shift between two languages. Hence, the training accrued through sustained language control was thought to affect EF, also supported by neurophysiological findings indicating that bilinguals engage domain-general EF networks during language switching (e.g., Abutalebi, 2013). However, given the growing body of null-result findings (e.g., Duñabeitia et al., 2014), replicating previous findings of differences between monolinguals and bilinguals while controlling for relevant factors such as the socio-economic backgrounds of the individuals tested (Hilchey & Klein, 2011) could strengthen the argument in favor of significant EF differences between groups. In the present study, 72 monolingual and multilingual children (mean age = 11.4) attending either monolingual or dual immersion secondary school were tested using Flanker and Simon tasks. The results indicate an inhibitory control advantage as indexed by a smaller Flanker effect magnitude for multilinguals over monolinguals, irrespective of which school was attended. Performances on the Simon task did not differ. These results are in line with and largely replicate previous studies (e.g., Poarch & van Hell, 2012) and will be discussed against the backdrop of possibly differing task demands and corresponding cognitive loads as well as which immersive contexts suffice to significantly affect EF.

References


Is there a bimodal advantage in language switching?
Simone Schäffner and Andrea M. Philipp
(RWTH Aachen)

In recent times, there has been increasing interest in multimodality during language processing. In the field of bilingualism, different modalities are considered, for example, in terms of unimodal and bimodal language switching. In unimodal language switching both languages are produced via the same modality (i.e., vocally). In bimodal language switching, one language is assigned to the vocal modality and the other language is assigned to the manual modality. Up to now, bimodal language switching was focused on switching between a spoken language and a sign language. In the present language-switching experiments, we examined bimodal language switching for non-signers. In Experiment 1, participants switched between two spoken languages (unimodal condition) and between a spoken language and manual responses that were very similar to sign language (bimodal condition). Participants of Experiment 2 switched between two originally spoken languages in both conditions. The unimodal condition was the same as in Experiment 1. In the bimodal condition, one language was produced vocally (i.e., spoken responses) and the other language was produced manually (i.e., written responses). Results of both experiments revealed a bimodal advantage with regard to overall performance. That is, responses were faster and more accurate in the bimodal compared to the unimodal condition. Switch costs, in contrast, were only reduced in Experiment 1. More precisely, there were significantly lower switch costs for bimodal switching compared to unimodal switching in Experiment 1. In Experiment 2 (when participants switched between two originally spoken languages), there was no significant reduction of switch costs for bimodal switching. This speaks for different underlying inhibitory control mechanisms in Experiment 1 and 2 rather than between unimodal and bimodal language switching in general. We assume less costly output channel inhibition for switching between a spoken language and a sign language or sign-language like manual responses (as in Experiment 1). Bimodal switching between two originally spoken languages (as in Experiment 2), in contrast, seems to imply more costly lexical inhibition, which hinders the occurrence of a bimodal advantage (with regard to switch costs) for this kind of bimodal switching.
Switching costs in a multilingual reading span task

Benoît Perriard (University of Fribourg), Maurits van den Noort (Kyung Hee University), and Valérie Camos (University of Fribourg)

A bilingual person in its everyday life has to select the appropriate language to use in a specific context. Frequently, this individual has to switch between two languages, highlighting one and suppressing the other. The aim of the present study was to assess the cost of this switching with a multilingual reading span task. Nineteen early bilingual young adults who learned German and French before the age of 10 and English after the age of 10 performed a reading span task in which they had to read sentences and to memorize the last word of each sentence. Each trial was composed of several sentences either in the same language (German (L1), French (L2) or English (L3)) or in mixed languages. In this latter condition, two languages alternated across sentences (either L1L2 or L1L3). If switching between languages induces a general cognitive cost, recall performance in the mixed condition should be lower than in the one-language trials. Language proficiency tests revealed our participants were more proficient in L1 than L2 and L3, though no significant difference emerged between L2 and L3. As expected, reading span results showed that performance was higher in L1 than in L1L2 and L1L3, whereas performance in mixed language conditions were similar as in L2 and L3 conditions. We propose that in L2 and L3 conditions, the L1 is still active and needs to be inhibited.
Talk session 7
Reading and memory
A corpus study of bilingual reading
Nicolas Dirix (Ghent University), Uschi Cop (Ghent University), Denis Drieghe (University of Southampton), and Wouter Duyck (Ghent University)

In an eye tracking megastudy, late Dutch-English bilinguals and monolingual participants read an entire novel while we recorded their eye movements. The bilingual participants read half of the novel in Dutch and the other half in English, the monolinguals only read in English. This approach yielded a unique (bilingual) eye tracking corpus, with hundreds of thousands of fixation points. We will discuss some of the results that we obtained by analyzing data of the corpus. First, we will present reading differences between L1 and L2 reading on one hand and bilingual and monolingual reading on the other hand. Second, we looked into some effects at the word level in depth, such as word frequency effects, cognate facilitation and (cross-lingual) neighborhood density and frequency effects. Finally we will present the outcomes of our latest study, where we investigated the effect of L1 and L2 word-level age-of-acquisition on reading times. There seemed to be a complex pattern of L1 and L2 AoA effects on bilingual reading, which also allowed us to make inferences about the origin of AoA effects.
Response competition for cognates: The cognate facilitation effect depends on stimulus list composition
Eva D. Poort and Jennifer M. Rodd
(University College London)

Cognates share their form and meaning across languages; “fruit” in English translates to “fruit” in Dutch. They are often processed more quickly, on a range of tasks, than words that exist in one language only (Dijkstra et al., 2010). This has been taken as strong evidence that bilingual speakers have one integrated lexicon and that access to it is language non-selective. In contrast, Poort et al. (2016) found (non-significant) inhibition for cognates using an English lexical decision task, which also included interlingual homographs, pseudohomophones and Dutch controls, suggesting that this key result may not be as robust as was previously thought.

The current web-based English lexical decision experiment investigated whether the cognate facilitation effect depends on stimulus list composition. Five versions of the experiment were created. The ‘classic’ version included only identical cognates, English controls and regular non-words. The other versions also included either identical interlingual homographs (e.g. “angel”, which means “insect’s sting” in Dutch), pseudohomophones (e.g. “mistaik”, instead of regular non-words), Dutch controls (e.g. “krijt”, which does not exist in English) or all three filler types (‘combined’).

As expected, significant facilitation for cognates was observed in the classic version (49.7ms) and also when identical interlingual homographs or pseudohomophones were included (22.4ms; 31.0ms). In contrast, when the Dutch control words were included (either alone or together with the other fillers) the cognate facilitation effect was significantly reduced (5.9ms; 12.9ms).

We suggest that whenever participants must respond ‘no’ to Dutch words, competition arises between the ‘yes’ and ‘no’ responses associated with the cognates’ two interpretations. This competition can explain the delayed lexical decision responses. This view is analogous to explanations of similar list composition effects for interlingual homographs (Dijkstra et al., 1998). Models of the bilingual mental lexicon, including the Bilingual Interactive Activation plus (BIA+) model (Dijkstra & Van Heuven, 2002), can accommodate this finding by assuming that cognate and interlingual homograph effects are influenced by facilitation/competition both within the lexicon and at the decision level.

References


When you don’t understand what you read. 
Vocabulary support when reading academic texts in English.

Ellen De Bruyne, Marcelo Kremer, and Martin Valcke
(Ghent University)

Reading academic texts is an essential gateway to scientific knowledge acquisition. Academic texts challenge students’ vocabulary knowledge since they need understanding of specific sub-technical and domain-specific words. This is even truer when studying in L2. L2 proficiency is expected to play a significant factor in explaining differences in learning outcomes as a result of the connection between L2 vocabulary mastery and L2 reading comprehension.

The present study builds on assumptions about the benefits of providing EMI learners (English as Medium of Instruction) with vocabulary support when coping with academic texts. As part of the LEMMA research project (Language, Education, and Memory in Multilingualism and Academia) an intervention study was set up to offer vocabulary support while reading an L2 text. The research involved 123 first year university students, building on a 1 x 3 factorial quasi-experimental pretest-posttest design. Research conditions were built on differences in L2 vocabulary support: (1) no support, (2) support before reading and (3) just-in-time support. The research was set up in a controlled lab setting with participants working on individual computer stations. Students studied a text about “metacognition” in view of taking a posttest. The latter was compared to the results of a pretest.

Research instruments included a background questionnaire, knowledge tests and scales measuring English language proficiency, self-efficacy, attitude, motivation, working memory capacity and time for completing the task. After the reading task additional qualitative data was collected by a self-reflective questionnaire and 30 stimulated recall interviews (10 per condition) to examine how students cope with the reading task and the given support.

Hypotheses build on theories about language interdependency, linguistic thresholds, cognitive load and competition for working memory resources. Results point at the specific impact of vocabulary support and the interaction with other variables such as language proficiency, self-efficacy and motivation.

Theoretical and practical implications will be presented to provide directions for future research and practice.
Differential working memory capacity in L1 and L2

Eli Rugaard and Christer Johansson
(University of Bergen)

Language comprehension depends in part on working memory capacity (Just and Carpenter, 1992), and first and second languages may differ in how efficiently they represent words. We developed a test that may detect an imbalance in working memory capacity between L1 and L2. The hypothesis is that when we get close to the working memory limit there will be differential effects for L1 and L2, and L2 will be both slower to decide and less accurate at the limit.

Just and Carpenter (1992) allow for individual variance in verbal memory and assert that this is related to differences in sentence processing, for example that high-span subjects may maintain ambiguities for longer periods of time. We are interested in finding a differential effect between L1 and L2, with the longer-term goal to explain individual differences in syntactic processing and code switching.

We used Sternberg’s Memory Scanning Test (cf. Corbin and Marquer, 2009) as a start. Words are separated into two sets, a memory set and a search set. Our memory set varied between 4, 6 and 8 words, where each word is presented for 500ms. The search set was kept constant at 4 words. The participant reads the memory set, and marks if they find a matching word in the search set. Three experimental conditions test the effect of translation A: no translations between the sets, B: one word from the memory set is translated in the search set, C: one word from the memory set is translated in the search set only when there is a match word.

There are significant reaction time effects for Memory Set at 8 words for L2, but not L1, for all conditions, which is congruent with our hypothesis that we will see Working Memory differences between L1 and L2. We have also noted that some, but not all, participants have different distributions of correct answers between L1 and L2. This may be used as a factor that is more precise than a simple high spanner vs. low spanner test for use in experiments that involve cross-linguistic language processing.

References


Poster presentations
Poster session 1
Syntactic mimicry and its prosocial effects in L1 and L2
Loes Abrahams (Ghent University) and M. Teresa Bajo (University of Granada)

Although numerous studies have been conducted on syntactic mimicry in individuals’ first language (L1; e.g. Branigan, Pickering, & Cleland, 2000), findings are less coherent about this phenomenon in second languages (L2; McDonough, 2006; Schoonbaert, Hartsuiker, & Pickering, 2007). Additionally, research has suggested that being imitated verbally might elicit increased levels of prosocial behaviour in the person being mimicked (e.g. Van Baaren, Holland, Steenaert, & Van Knippenberg, 2003), however, studies have yet to investigate these effects in L2. The present study therefore examined these two manifestations with syntactic (dative) mimicry in Spanish-English bilinguals’ L2 (versus native English speakers’ L1) in a dialogue task with a confederate. During this task L2 participants tended to mimic the confederate’s syntactic structures to the same extent as L1 participants did (Experiment 1). We did find, however, only prosocial effects of syntactic mimicry towards the interlocutor in L1 and not in L2 (Experiment 2). Since Experiment 2’s results suggested a possible presence of negative effects of anti imitation (i.e. the control condition), a third experiment was conducted in which a distinction was made between an anti imitation condition and a truly neutral condition (in addition to an imitation condition) in Spanish L1 individuals. Although again positive effects of imitation were found, no differences in prosocial behaviour between the anti imitation condition and the neutral condition were observed (Experiment 3), suggesting an absence of negative effects of verbal anti imitation. Further research should be conducted in order to identify possibly mediating variables in L2 verbal imitation (such as culture).

References


School Readiness and Reading: Does Bilingualism matter?

Alaria Laura (University of Geneva), Patrucco-Nanchen Tamara (University of Geneva), Béguin Céline (University of Geneva), Diane Poulin-Dubois (Concordia University), Friend Margaret (San Diego State University), and Pascal Zesiger (University of Geneva)

Whether bilinguals perform better than monolinguals is a current debate focusing essentially on cognitive control tasks (Adesope, Lavin, Thompson & Ungerleider, 2010). Recent studies suggest that early reading difficulties might be due to deficits in working memory and/or cognitive flexibility (Engel de Abreu et al., 2014). Hence, understanding how bilinguals are different from monolinguals in reading is a priority in psychological and educational research. It has been well established that emergent literacy skills develop prior to beginning reading acquisition on a solid oral language foundation and early print-related skills for reading achievement (Speece, Roth, Cooper & De la Paz, 1999).

In the first study we investigated the relation between school-readiness (Lollipop test, 1981), executive functions (working memory, inhibition and cognitive flexibility) and oral skills in 30 French-English bilingual and 63 French monolingual children, all at the age of 4 years. Measures of school readiness involved the naming of digits, letters, quantities, colors and forms. A battery of tests also explored vocabulary, grammar, storytelling, rapid naming of objects and phonological working memory as precursors to reading. Bilinguals were tested in the two languages for most of the tasks.

In the second study, 25 bilinguals (French vs one language among multiples) and 33 French monolinguals were assessed at 8 or 9 years of age. We investigated in the two groups the link between reading (fluency and precision), executive functions (inhibition, flexibility and auditory attention), rapid automatized naming, lexical decision and metaphonology.

The analyses of these collected data are currently under processing and will be available very soon. It should lead to a deeper understanding about how executive control is related to reading. These results could allow to develop new paradigm for remediation or training for reading achievement in both monolingual and bilingual populations.
The development of cognitive control and working memory during second language acquisition: A longitudinal study

Sofie Ameloot, Evy Woumans, Emmanuel Keuleers, and Eva Van Assche
(Ghent University)

Bilingualism is thought to result in advantageous effects, like better developed cognitive control (CC; e.g. Costa & Sebastian-Galles, 2014) and better evolved working memory (WM; Morales, Calvo, & Bialystok, 2013). Further research has shown that the reverse effect is also possible; CC predicts artificial language learning (Kapa & Colombo, 2014). However, an artificial language is not as complex as a normal spoken language. This paper aims to investigate the influence of CC and WM on language acquisition further by examining children receiving immersion education. At T1, we tested 85 French children starting in a Dutch immersion education program the next school year. At T2, a year later, they were tested again. They were administered a range of tests: language tests (Peabody Picture Vocabulary Test in French at T1 and T2 and Dutch at T2), CC measurements (DCCS and flanker task) and a WM task. At T1 their age was approximately 5 years old, and at T2 6 years old. Reaction times (RT) and overall interference effects were measured, as well as accuracy on language tests and on an intelligence test. We expect to find a positive correlation between vocabulary scores and performance on CC, and between vocabulary and WM tests. Furthermore, we hypothesize that the Dutch language results at T2 will predict the CC scores at T2 (Crivello et al., 2016). These findings would result in the conclusion that initial performance on CC and WM influences second language acquisition, and that language acquisition then affects CC and WM. We will attempt to underline the importance of initial variables on language acquisition, with regard to future research. Data acquisition of T2 is ongoing.

References


Anaphoric dependencies in Basque cL2 language acquisition

Maialen Iraola Azpiroz (University of Kaiserslautern) and Maria-José Ezeizabarrena (University of the Basque Country)

Compared to the substantial number of studies on monolinguals and simultaneous bilinguals on the acquisition of discourse-pragmatic constraints on the use of pronouns (a.o. Sorace et al. 2009), there has been much less investigation in c(hild)L2 learners. An exception is the study by Kraš (2015) in Croatian cL2 learners acquiring Italian, a language combination where the distribution of pronouns does not differ. CL2 learners showed similar preferences to those of monolinguals. More importantly, in some conditions cL2 learners outperformed monolinguals by selecting less often infelicitous overt pronouns as a result of L1-driven acceleration. Based on these results, Kraš (2015) argues that instability at the syntax-discourse interface may be primarily driven by crosslinguistic influence in cL2 learners whose L1 differs from the L2 in the interface under study. This study aims at exploring further the performance of cL2 learners by providing data from Spanish cL2 learners of Basque. The interpretations of hura “that” in contrast to null pronouns were analysed in younger (aged 6–7) and older (aged 8–10) groups acquiring Basque as L1 or L2. The results from a picture selection task revealed that L1 and cL2 learners had still not acquired the [+topic shift] feature encoded in hura by age 6–7. However, L1 8–10-year-olds were better at interpreting hura despite not reaching adult levels. Such a development between age groups was not observed in cL2 learners. Although Basque and Spanish are similar with respect to the null subject parameter, the distribution of overt forms seems to differ. Whereas hura shows a bias towards a nontopical antecedent, the Spanish él does not seem to have such a strong bias (Filiaci et al. 2014). The results suggest that cL2 learners may behave in a non-targetlike fashion when there exist crosslinguistic differences due to representational deficits.

References


Do we use the same mechanisms of cognitive control in linguistic and non-linguistic tasks?

Ihor Biloushchenko and Dominiek Sandra
(University of Antwerp)

The amount of papers on bilingualism shows how highly intriguing this topic has been for researchers. Psycholinguists have become more aware that most people speak two or more languages, what makes bilingual brain a norm rather than exception. Lately researchers noticed that being bilingual or multilingual has beneficial effects on the brain’s flexibility (e.g., Bialystok et al., 2012). Also years of research have left little room for a discussion on the issue of separate lexicons with language-specific access mechanism, or a shared lexicon with language-independent access mechanism. Bilingual Interactive Activation + (BIA+) model (Dijkstra & Van Heuven, 2002) explains the experimental effects and incorporates the notion of a common lexicon with a language-independent access mechanism.

In different studies bilinguals outperform monolinguals in cognitive tasks (e.g., Morales et al., 2013). This supports the hypothesis that bilinguals use the same or at least shared mechanisms of cognitive control while solving non-linguistic tasks and while suppressing the irrelevant language in linguistic tasks.

This brings us to the hypothesis that shared mechanisms should give rise to a correlation between two types of tasks if we administer them to the same participants.

Based on our previous studies (unpublished) and studies by Dijkstra and colleagues (e.g., Dijkstra et al., 2000), which support the BIA+ model and shows the influence of list composition on the perception of interlingual words, we will not only study the correlation between the non-linguistic and linguistic cognitive tasks, but also vary the language context in the experimental list. Thus we will be able to see whether there is a stronger correlation in the case of a larger inhibition effect.

In our experiments we use a within-participants design, where the same participant has to finish a Simon task or an AX-CPT task (tasks frequently used to assess the degree of cognitive control) and a Lexical decision task in one of three language contexts (i.e., stimulus composition): English and Dutch, English and French, and pure English. We use English/Dutch interlingual homographs (like ‘room’ meaning ‘cream’ in Dutch) in all experiments to be able to measure different levels of inhibition for the different compositions (from strong inhibition in the English/Dutch context to almost no inhibition in the pure English context).

References

The role of uncertainty in internal error detection during L2 learning

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Performance monitoring leads to an ERP component known as the Error Related Negativity (ERN) in case an error is detected. However, the occurrence of a Correct Related Negativity (CRN) challenges the error detection account. One interpretation links the finding of a large CRN to uncertainty in response selection due to perceptual awareness [1], but the functional significance of the CRN remains debated [2]. The present study aims to shed new light on the role of uncertainty by considering a learning situation where confident error detection is a process in development and certainty regarding response correctness is low. We thus examine whether the occurrence of a large CRN during learning is a reflection of uncertainty while representations are unstable. This question is addressed by testing the assignment of grammatical gender in German L2 learners of Dutch. A previous study showed these learners experience great difficulty regarding correct use of determiners, as indicated by high error rates at learning onset and a persistent large CRN component following behavioural improvement [3]. In the present study, we asked a similar group of L2 learners to decide on the correct determiner for Dutch nouns, but now also measured and manipulated response certainty. Learners were asked to give certainty ratings for their responses, and received feedback to improve their performance. Additionally, we manipulated the degree of L1-L2 conflict by comparing two groups of nouns that are both gender-incompatible in the two languages, but that are either form-similar (cognates) or not (non-cognates), a factor that has been proven crucial for the extent of L1-L2 gender mapping [4]. Results will be discussed in terms of the role of uncertainty in generating ERN-like components in the EEG, possibly explaining why previous studies [3, 5] found little evidence for internal error detection during L2 learning.

References


Identification of facial expressions of emotion in balanced and unbalanced 4-year-old bilinguals

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While many studies support the notion of a bilingual advantage, this has increasingly been challenged (e.g. Paap et al., 2015). It is suggested by some that the inconsistent results found in this area may depend on the nature of the task (see Adesope et al., 2010 and Barac et al., 2014 for reviews), but also on the type of bilingual the participant is (e.g. Sabourin & Vinerte, 2015; Verreyt et al., 2016; Weber et al., 2015). For instance, bilinguals frequently switching between their languages show a more prominent advantage than less frequently switching bilinguals (Verreyt et al., 2016). Also, it has been suggested that the more balanced a bilingual is, the more enhanced the executive functions may become (Weber et al., 2015). The current study aimed to investigate this issue further by conducting an experiment where 4-year-old bilingual children were asked to identify facial expressions of emotion (happiness, anger, sadness, and fear). Three groups of children were tested: balanced bilinguals, unbalanced bilinguals, and monolinguals. It was predicted that there would be a difference in performance based on group. Preliminary results seem to support the hypothesis and suggest that type of bilingualism may have an effect on performance in tasks requiring executive functions.

References


English has become the global language, and thus there have been studies on English as a foreign language. There is scarce research on the relations between the spatial ability and foreign language learning. This study aims to discuss how students’ spatial ability to influence their English learning in grammar and reading comprehension in a rural school in Taiwan. The reason to assess students spatial ability is based on the theoretical and empirical researches which indicate the learning style of students with high spatial ability is whole-to-part, they tend to perceive learning material holistically (Silverman, 1989). This research was conducted in a rural junior high school in the south of Taiwan. Twenty-nine students were selected for three tests developed by the researchers. The tests were: spatial ability, grammar competence, and reading comprehension. In addition, the scores of the students in the school-wide English tests were included in the statistical data to analyze the correlation between spatial ability, students’ grammar competency, reading comprehension, and English tests at school. The result indicated that there is high correlation between students’ spatial ability and reading comprehension (r=.80, p<.05). There is no correlation between students’ spatial ability and grammar. This implies that students with high spatial ability have advantages in English reading comprehension, yet might be weak in learning grammar. Therefore, in order to assist such students learn English effectively, it might be beneficial to guide them to comprehend the reading texts before analyzing the sentence patterns.

References

Powerful or powerless? Identity and language learning of new immigrants in Taiwan

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The interaction between Taiwanese and Southeast Asians have been increased after the Toward-Southeast Asia Policy and the cross-Taiwan Strait relations between Taiwan and China, these facilitates the cross-border marriages. There have been more than 500,000 marriage immigrants in Taiwan, and most of them are females. The greater Taiwan society, however, is declined to have negative stereotypes against them. Would this affect the new immigrants’ identity and language learning? This research adopted the concepts of language ego (Guiora, 1979) to explore the permeability of a new language, L2 Motivational Self System (Dörnyei, 2005), and L2 persona of a female Vietnamese immigrant in learning Taiwanese with a qualitative approach. The findings indicate that the participant was eager to learn Taiwanese in order to communicate with her Taiwanese family members, especially father-in-law. Secondly, she enjoyed learning languages to interact with others and to understand different cultures. Third, the support of Taiwanese family members increased her desire to learn Taiwanese well. Fourth, participation in the non-government organization helped her learn Taiwanese well and also established her personal social network. Fifth, the participant was quite self-confident with her Taiwanese proficiency and had developed positive with Taiwan and Vietnam. She, thus, felt empowered in Taiwan even though there was prejudice from the greater Taiwan society against the new immigrants. This research demonstrates that learning the language of the host country well could be one of the methods to empower the immigrants, especially for those who have developed bilingualism. Nonetheless, the individual permeability, support of family and personal social network play key roles.

References


Multilingualism and academic literacy
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Since 2010, several KU Leuven faculties and colleges participate in a large-scale, low-stakes language test of academic Dutch at the beginning of the first year. The test, taken by 11,144 students between 2010 and 2014 is constructed to detect possible at-risk students and give them an early warning signal. It consists of 25 selected-response vocabulary and reading items and lasts maximum 30 minutes (De Wachter & Heeren 2013). A predictive validity study with 2660 university students shows a significant positive correlation with study success (De Wachter et al. 2013). This presentation focuses on the interaction between the language students speak at home and their language of pre-university instruction in relation to their academic language test scores.

After filtering out incomplete data, the dataset consisted of the language test scores of 11,144 students in four academic years between 2010 and 2014, of which 3578 college students and 7566 university students. In the data analysis, a linear regression was run with the test score (SCORE) as response variable and as predictors their home language (HOME), whether there was a difference in home and schooling language (DIFF), their sex (SEX) and the year in which the test was taken (YEAR).

The most important finding of the analysis is a significant interaction between home language and the language of pre-university schooling. When Dutch speaking students had a language of schooling different from their home language, their language test results were lower than when their home and schooling language were the same. However, when students indicated that they rarely spoke Dutch at home the effect was reversed, meaning that a difference in home and schooling language went together with higher language test scores. Finally, when students indicated that they mainly spoke Dutch at home and sometimes another language the effect was similar, but less strong. Of these two groups 92.5% indicated Dutch as their pre-university school language. That seems to indicate that the Dutch academic language proficiency of students in a multilingual home situation benefits from a pre-university education in Dutch.
Do non-native speakers adapt speech production after speech perception?

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In dialogue, speakers tend to adapt their speech to the speech of their interlocutor. Adapting speech production to preceding speech input may be particularly relevant for second language (L2) speakers interacting with native (L1) speakers, as adaptation may facilitate second language learning. However, efficiently adapting speech behavior in L2-L1 interaction requires a degree of flexibility and automaticity that L2 speakers may lack (Costa, Pickering, & Sorace, 2008). Here we asked whether Dutch-English bilinguals adapt pronunciation of the English phonemes /æ/ and coda /b/ when reading aloud sentences after exposure to native English speech. In addition, we tested whether social context (presence or absence of a native English confederate) and time lag between perception and production of the phoneme affected adaptation.

Participants produced more English-like target words with coda /b/ (longer vowel preceding /b/) after exposure to target phonemes produced by a native speaker. The participants also adapted their production of /æ/ (higher F1) after exposure, but only if the confederate was present in the room during the experiment. Interestingly, the confederate also adapted her pronunciation of /æ/ to be more like the participants’ pronunciation (lower F1) from the exposure phase to the post-exposure phase, in which she and the participant took turns in reading aloud sentences. Time lag between perception and production of target phonemes in the post-exposure phase did not affect adaptation by the participants.

Findings suggest that bilinguals adapt their production of L2 phonemes after exposure to the phoneme produced by a native speaker. Adaptation in L2-L1 interaction may be affected by the acoustic space available for adaptation, and by social context.

References

Age of language acquisition influences the cortical language organization in multilingual patients undergoing awake brain mapping

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Objectives. Most knowledge regarding the anatomical organization of multilingualism is based on aphasiology and functional imaging studies. However, the results have still to be validated by the gold standard approach, namely electrical stimulation mapping (ESM) during awake neurosurgical procedures. In this ESM study we describe language representation in a highly specific group of 13 multilinguals, focusing on how age of acquisition may influence the cortical organization of language.

Methods. Thirteen highly proficient multilingual patients harboring lesions within the dominant, left hemisphere underwent ESM while being operated on under awake conditions. Demographic and language data were recorded in relation to age of acquisition (native language/early/late acquired languages), neuropsychological pre/postoperative language tests, number and location of language sites, and overlapping distribution in terms of language acquisition time. Analysis included lesion growth pattern/histopathology, location, and size.

Results The functional language-related sites were distributed in the frontal (55%), temporal (29%), and parietal lobes (16%). Of these sites, 38% were located outside the areas predicted by classical models. The total number of native language sites was 47. Early acquired languages (including native) were represented in 97 sites (55 overlapped) and late acquired languages in 70 sites (45 overlapped). The overlapping distribution was 20% for early-early, 71% for early-late, and 9% for late-late acquired languages. Average lesion size was 3.3 cm, comprising five fast and seven slow growing lesions.

Conclusions. Cortical language distribution in multilingual patients is not homogeneous, and it is influenced by age of acquisition. Early acquired languages are represented across a larger anatomical region than are those acquired later. The prevalent early acquired languages are largely represented within classical areas. Late acquired languages are less represented and mostly overlapped with the former. A large percentage of cortical, functional language sites are located away from the theoretical anatomical location and are not overlapped.
Exploring conceptual generalization of response-effect compatibility with bilingual transfer

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The ideomotor principle states that actions are represented by their sensory consequences. This leads to an anticipation of the effect following one’s action which facilitates action selection and initiation. This notion can be tested with the response-effect compatibility (REC) paradigm, where participants’ responses are followed by response effects that are either compatible or incompatible with the given response. Compatibility can be created in different ways, for example if an effect appears on the right side of the screen after a right-hand response, it is considered compatible due to the spatial correspondence, while if the effect appears on the left side after the right-hand response, the effect is considered incompatible because of the spatial mismatch. Reaction time is observed to be shorter in the compatible condition compared to the incompatible condition (i.e., REC effect), suggesting that effect anticipation plays a role in action control (Badets, Koch, Philipp, 2016).

In the present study, we examined a possible conceptual generalization in the REC paradigm, more specifically, participants had to respond by saying a word and the effect was a word presented in the same language or another. Additionally, words could be compatible (i.e., they had the same meaning) or incompatible (different meaning). We compared performance of a group with bilingual transfer (i.e., German response was followed by an English effect), and a monolingual group in which response and effect languages were the same (either both in English or both in German.)

We expected to find a REC effect in both groups, suggesting that response effects are represented conceptually, regardless of the language. However, while an REC effect was found with the monolingual group, a strong reversed effect was observed for the bilingual transfer group.

To interpret this reversal, we suppose that the anticipation of an effect word can lead to an interference with the production of a response word. The present data also suggest that this interference is even larger when both words are conceptually linked but from different languages than when the words are incompatible. Thus, the present results suggest a special role and language-specificity of response effects in bilingual condition rather than a shared conceptual basis.

References

Language in goal framing
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People are constantly exposed to messages that promote a certain kind of action (goal framing) and face decision-making situations. From childhood to adulthood, with relatives or educators, health specialists, politicians, and the media, we are called to evaluate the significance of an issue and act upon it on a daily basis: If you don’t eat your food, you won’t grow up; if you lead a healthy lifestyle, you can add years to your life (Levin, Schneider, & Gaeth, 1998). It thus becomes clear that it is of paramount importance for social interaction and persuasive communication to identify how cognitive processes and emotional states involved in decision making might be modulated by language-related variables, and how language can act as an enhancer for the adoption of a promoted behavior. The present study examined the persuasiveness of a message by manipulating whether the message was presented in a way that appeared more relevant or less relevant to its recipients (Petty & Cacioppo, 1983), whether it was framed in a positive or negative way (Tversky & Kahneman, 1981), and whether it was presented in the recipients’ native or second language (Costa et al., 2014; Keysar, Hayakawa, & An, 2012). 528 highly proficient Greek-English bilinguals read a short text in their native language (L1-Greek) or second language (L2-English) and answered questions pertaining to their attitudes towards the issue in question and their intentions of adopting the behaviour promoted by the implicit goal of the message. The results showed that the message was more persuasive when it was more relevant to the recipients than not; when a negativity bias was created by emotionally negative words as opposed to a negative grammatical structure or emotionally positive words; and when the language used was the recipients’ L1 as opposed to their L2. Implications of how language can be used as a tool to frame a message and motivate a certain course of action will be discussed.

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What do I choose? Influence of interlocutors’ awareness
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People are often situated in different social contexts and effective communication is their ultimate goal. In such situations, it is interesting to notice, as to how bilinguals often adapt, and communicate well with different interlocutors with respect to their linguistic backgrounds [1]. It is important to consider what factors contribute to this effective adaptation. In this study, we investigated how perceived linguistic ability of an interlocutor influences a bilingual’s language choice and production through a picture-naming task.

Twenty-seven high proficient Telugu- English bilinguals (M=22.9 years, SD = 2.6 years) were introduced to an audio-visual stimuli that consisted of four types of animated human-like cartoons, which spoke in English (L2) and Telugu (L1). These cartoons differed only on their level of fluency in English (L2). Cartoons for Condition-1 spoke fluent Telugu and English, whereas for Condition-2 cartoons spoke fluently in Telugu but not in English. After the exposure phase, these cartoons (four familiarized cartoons and two unfamiliar cartoons- Neutral Condition) were presented in a randomized order, followed by a choice screen to choose a language. Participants were asked to subsequently name a picture in the chosen language. We predicted that the participants would choose the language with reference to the cartoon’s linguistic ability. It was found that participants’ language choices were significantly influenced by the linguistic ability of the cartoon present on that trial F (1, 26) = 528.9; p < 0.001. There were significant differences between the language choices across Condition-1 participants chose English more (p <0.001); Condition-2 participants chose Telugu more (p<0.05) but in Neutral Condition-3 Telugu and English was chosen equally p=0.485 (Figure-2). Naming latencies and switch costs were also analyzed.

These findings suggest that the cartoon’s linguistic context does effect the top down process even when there was a voluntary choice. It also indicates that the bilinguals can effectively predict context-appropriate language even when a non-linguistic context was presented.

References
This paper aimed to shed light on the processes underlying the developmental trajectories of bilinguals' disadvantage in processing grammatical gender. Two processes were proposed to account for the bilingual disadvantage: One ties the disadvantage to reduced exposure to each language (e.g., frequency lag) whereas the other emphasizes cross-language interference. To examine the contribution of these processes to the bilingual disadvantage, we compared the performance of Hebrew monolingual and Russian-Hebrew bilingual children on a noun-adjective production task that required gender-inflection and agreement. The contribution of cross-language interference was evaluated by comparing performance on nouns with grammatical gender that was either congruent or incongruent across the two languages. The contribution of long-term language experience was evaluated by comparing monolingual and bilingual performance on gender congruent nouns in which cross-language interference cannot account for the disadvantage.

In total, 130 kindergarten, first and second grade children were tested, of which about half were monolingual Hebrew and the others were Russian-Hebrew speakers. On 48 trials participants were presented with a drawing of an object and a colored card, and asked to name the object and add the color adjective in Hebrew in the plural form using the correct gender inflection and agreement. Half the objects had congruent gender in Russian and Hebrew, and half were incongruent. We recorded inflection and agreement errors.

Overall, bilinguals showed more errors than monolinguals. Critically, in both inflection and agreement errors, the difference between congruent and incongruent gender nouns was larger for bilinguals, indicating that when Russian grammatical gender directly conflicts with that of the Hebrew noun, more errors are shown for bilinguals predicted by the cross-language interference account. Interestingly, the bilingual disadvantage was not confined to incongruent gender trials. Rather, compared to monolinguals, bilinguals produced more inflection and agreement errors on congruent nouns, but this disadvantage disappeared by the second grade, revealing the influence of long term-language experience.

The data supports our hypothesis that the bilingual disadvantage is the result of two different processes with different trajectories. On one hand, reduced exposure to the target language leads to lower frequency of use of words in that language. On the other, cross-language interference results in conflicting representations that hinders production. Whereas the first process seems to diminish with age, schooling and increased exposure to the target language, the second seems persists after the gender agreement system in the target language has been acquired.
Current language experience influences eye movements during L1, L2, and L3 reading: Evidence from a gaze-contingent moving window paradigm

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Previous work using gaze-contingent methods (McConkie & Rayner, 1975) has revealed differences in eye movement measures of first-language (L1) and second-language (L2) sentence reading as a function of individual differences in current L2 experience among bilinguals (Whitford & Titone, 2015). Specifically, greater current L2 experience improves L2 reading fluency, but impedes L1 reading fluency. Of relevance here, a recent reanalysis of these data suggests that bilingual reading performance is also affected by the number of languages known to an individual (Titone, Whitford, Lijewska, & Iztak, in press). Specifically, young adults who know more than 2 languages exhibit stronger reading performance than those who know only 2 languages. The present study directly investigates the processes involved in trilingual reading by using a gaze-contingent moving window paradigm to investigate L1, L2, and L3 reading patterns in a trilingual sample. Polish students of English and French read sentences in their L1, L2, and L3 while we monitored their eye movements. Sentences were displayed either in their full form or across 4 window-conditions, which manipulated the amount of parafoveal information available to the right of fixation: 2, 6, 10, or 14 characters to the right of fixation; window size to the left of fixation was fixed at 4 characters. Preliminary analyses revealed that our participants’ reading performance (indexed by average reading rate) was strongest in their L2 (English), followed by their L1 (Polish), and L3 (French). Because our participants were native Polish speakers living in Poland, but studying almost exclusively in English with only limited exposure to French, our findings suggest that reading performance is more influenced by current experience with a given language, rather than proficiency in a given language.

References


Direct interaction is mandatory for efficient learning in children (O’Doherty et al., 2011). More specifically, vocabulary learning is better achieved by children facing the teacher than when presented to the same teacher through video (so-called “video deficit” effect; Anderson & Pempek, 2005). This observation has significant implications for toddlers’ educational programs. Millions of adults also learn new vocabulary when learning a second language, and they are used to doing so through live interactions (classrooms) or through video-mediated lessons. Thus, it is important to explore whether adults suffer from “video deficit” effects, as children do. In the present study, 36 Spanish native late learners of English were involved in a vocabulary learning task divided into 3 conditions. In the Audio condition, participants had to learn 12 English words, by watching the objects through video and listening to a teacher’s voice pronouncing the names of the objects. In the Video condition, the same participants were facing the teacher through video, who was showing them the 12 objects and uttering the objects’ names. The Live condition was equivalent, except that the teacher was present in the room, facing the participant (word lists and conditions counterbalanced). At the end of each condition, a recall test was performed, and the number of correctly memorized names was submitted to a one-way ANOVA with one 3-level factor (Audio, Video, Live conditions). Participants learned significantly more words in the Video condition, as compared to the two other conditions (main effect of condition: F=5.6, p=.008). Better learning in Video (3.9±2.6) as compared to Audio condition (2.8±2.0; p=.03) revealed that adults benefit from the teacher’s display and eye-contact during second language vocabulary learning, confirming the fundamental role of eye-contact in social communication in adults (Frith, 2007). Interestingly, adults learned better through Video than in the Live condition (2.5±1.9; p=.01). We argue that adults suffer from social inhibition, meaning that they perform worse when in the presence of another person during task performance (Zajonc, 1965). In sum, we show that adults (unlike what was previously shown in children) suffer from facing a teacher, and gain from video-mediated tools—including a teacher’s display—for proper vocabulary learning. These results have important implications for pedagogical programs targeting adults’ second language vocabulary learning.
Interpreting is a highly demanding language activity where processes of comprehension and production of the speech are simultaneously activated with heavy time constraints and no possibility for review. This “immediacy” places a heavy demand on both language and executive control, which makes it of interest for different research fields such as linguistics, cognitive psychology and neurolinguistics. Our understanding of simultaneous interpreting as an extreme case of language processing has significantly grown since the studies conducted by Hervais-Adelman et al (2015) & Hervais-Adelman et al. (2014) using fMRI to test interpreters. Additionally, the increased amount of behavioral studies emerges the need of a systematic review to better understand the nature of interpreting as an extreme language control task. In this systematic review we have analyzed 20 research articles, which used at least one executive functioning task to test interpreters. The empirically validated theoretical framework by Miyake et al., (2000) was used to investigate which executive functions: “shifting”, “updating” & “inhibition”, was most affected by interpreting training and experience. The results show three effects. First, inhibition is affected most by bilingualism in general than by interpreting, specifically. Secondly, all groups of interpreters (professionals or students) outperformed non-interpreting control groups (either bilinguals, multilinguals, or monolinguals) on updating tasks. As one of the important components of working memory, updating capacity has a significant relationship with interpreting performance. However, the updating skill is not improved by interpreting training and experience, which may suggest that better performance of interpreting groups is related to initial individual differences. Thirdly, the shifting skill is the only executive function that significantly improved as a result of both interpreting training and expertise.

References


The impact of syntactic and processing factors on agreement errors in L2 vs. L1 German

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The current study investigates the computation of subject-verb agreement in adult L1 and L2 (CEFR: level B2 or higher) speakers of German. In two paper-and-pencil sentence completion experiments, subject-object order (SO vs. OS) and verb position (verb-second vs. verb-final) were manipulated. Moreover, processing load was increased by inserting genitive subject modifiers (singular vs. plural). Participants had to produce a number-marked auxiliary.

Several predictions may be discerned:

Prominence: A fronted case-ambiguous (vs. unambiguous) object is mistaken as controller.

Processing Load: A plural (vs. singular) genitive subject modifier attracts errors (Bock & Miller, 1991).

Distance: Agreement in SOV order is relatively hard to compute, agreement in OVS order is relatively easy.

Syntactic Configuration: Verb movement from final to second position establishes a new c-command relation resulting in fewer errors in SVO (vs. SOV) conditions but more errors in OVS (vs. OSV) conditions (cf. Franck, Lassi, Frauenfelder, & Rizzi, 2006).

Acquisition Process: L1 but not L2 speakers produce more errors in verb-final (vs. verb-second) sentences (Clahsen & Muysken, 1989).

In Experiment 1, transitive verbs were presented with case-ambiguous objects. Log-linear mixed models on L1 errors (overall 12% errors) show a main effect of word order (OS > SO) and a main effect of verb position (verb-final > verb-second), but no effect of genitive number. L2 errors (26%) reveal a main effect word order (OS > SO), no main effect of verb position, but a main effect of genitive number (plural > singular).

In Experiment 2, 2-place verbs are presented with unambiguous dative objects. Preliminary L1 results show fewer errors (3%) and a main effect of word order (OS > SO). L2 data (5% errors) are still sparse but show descriptive tendencies towards effects of word order (OS ≥ SO) and genitive number (plural ≥ singular), again.

To summarize, both groups show significant effects of word order predicted by Prominence. The effects are reduced in unambiguous structures where the object does not qualify as a potential controller. Moreover, L1 but not L2 speakers show an effect of verb position. This difference might be reminiscent to the Acquisition Process itself. Since L2 speakers show evidence for hierarchical processing of genitive phrases, an approach attributing the verb position difference to syntactic processing in L1 but non L2 speakers (Clahsen & Felser, 2006) is not supported by the data. Finally, the higher susceptibility to attraction errors mirrors an increased Processing Load in L2 (vs. L1).
Relationship between verbal fluency and executive control in bilinguals
Abhijeet Patra, Arpita Bose, and Theodoros Marinis
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Research has shown that bilinguals can perform better [1], similarly [2] or poorly [3] on verbal fluency test compared to monolinguals. These mixed results have been attributed to the differences in vocabulary between the two groups. Although, it is widely accepted that compared to monolinguals, bilinguals have better non-verbal executive control, limited research have explored the relationship amongst executive control, vocabulary and verbal fluency. This research investigated whether performance differences in verbal fluency between vocabulary-matched bilinguals and monolinguals can be explained by differences in their executive control abilities. Twenty-five Bengali-English bilinguals and 25 English monolinguals completed three semantic and three letter fluency tasks in English. The two groups were matched on age, education, non-verbal IQ, and English receptive vocabulary scores. Executive control measures tapped into inhibitory processes, mental-shifting and working memory. Whilst bilinguals and monolinguals were comparable on working memory, bilinguals showed significantly better inhibition and mental-shifting skills. On verbal fluency, there were no main effect of group on number of correct responses (CR), however, a significant interaction of group by type of fluency task (i.e., semantic or letter) was obtained. Monolinguals performed better than the bilinguals on semantic fluency, conversely, bilinguals performed better than the monolinguals on letter fluency. This differential performance of the groups based on the type of fluency task could be observed on the fluency proportion difference score (FPD = CR semantic fluency – CR letter fluency/CR semantic fluency), which is taken as a measure of executive control abilities [4]. Bilinguals demonstrated significantly lesser FPD, which was indicative of better executive control. The FPD scores showed a significant positive correlation with the mental-shifting scores only for bilinguals. These results highlight that executive control and word production abilities interact differentially for bilinguals and monolinguals. We would discuss the results in terms of the contributions of executive control during verbal fluency test amongst bilinguals and monolinguals.

References


Is foreign language learning the earlier the better? Empirical studies on the critical period in China and its implications

Li Qingzhao
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There are hot arguments on foreign language learning “the sooner the better” and “critical period hypothesis”, and it is critical to foreign language education policies. The review combs series of empirical studies on critical period to analyze disadvantages of the belief of bilingual education “the sooner the better” in China. The findings are: 1) Age is not the key factor to bilingual achievement, learning strategies, language distance and mother language proficiency are important factors that can not be ignored; 2) The results in external foreign language studies can not be used directly to guide domestic foreign language education policies; 3) Premature bilingual education interferes with the grasp of mother tongue, which will not benefit cultivation of talents. This paper can provide reference for educational policy makers, parents and educators, in order to arouse rational thinking on “the earlier the better” hypothesis of domestic English learning.
Differential working memory capacity in L1 and L2

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(University of Bergen)

Language comprehension depends in part on working memory capacity (Just and Carpenter, 1992), and first and second languages may differ in how efficiently they represent words. We developed a test that may detect an imbalance in working memory capacity between L1 and L2. The hypothesis is that when we get close to the working memory limit there will be differential effects for L1 and L2, and L2 will be both slower to decide and less accurate at the limit.

Just and Carpenter (1992) allow for individual variance in verbal memory and assert that this is related to differences in sentence processing, for example that high-span subjects may maintain ambiguities for longer periods of time. We are interested in finding a differential effect between L1 and L2, with the longer-term goal to explain individual differences in syntactic processing and code switching.

We used Sternberg’s Memory Scanning Test (cf. Corbin and Marquer, 2009) as a start. Words are separated into two sets, a memory set and a search set. Our memory set varied between 4, 6 and 8 words, where each word is presented for 500ms. The search set was kept constant at 4 words. The participant reads the memory set, and marks if they find a matching word in the search set. Three experimental conditions test the effect of translation A: no translations between the sets, B: one word from the memory set is translated in the search set, C: one word from the memory set is translated in the search set only when there is a match word.

There are significant reaction time effects for Memory Set at 8 words for L2, but not L1, for all conditions, which is congruent with our hypothesis that we will see Working Memory differences between L1 and L2. We have also noted that some, but not all, participants have different distributions of correct answers between L1 and L2. This may be used as a factor that is more precise than a simple high spanner vs. low spanner test for use in experiments that involve cross-linguistic language processing.

References


Can non-native speakers use implicit causality information as a predictive cue?

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Native speakers quickly make use of different types of cues to predict upcoming information during language comprehension. However, it is still unclear to which extent non-native processing is predictive [1]. Previous studies have mostly focused on cues like gender information. In a visual world eye-tracking experiment, we test whether non-native speakers can use implicit causality information, which has been shown to be used in an anticipatory fashion in adult native speakers [2, 3], as a predictive cue to establish coreference. Implicit causality is a semantic property of certain verb classes that is known to affect people’s discourse expectation [4].

We presented participants with spoken German context sentences that either included an NP1-biasing (1) or an NP2-biasing verb (2) followed by a causal connective and an ambiguous pronoun. Anticipatory effects should be reflected in more looks to the NP1 referent for NP1-biasing than for NP2-biasing verbs before disambiguating information (e.g. ein Messer... ‘a knife...’) is encountered. Our non-native group consisted of highly proficient late Russian-German learners. All of them also took part in another experiment which tested their off-line sensitivity to implicit causality information.

1) Der Indianer ängstigt den Cowboy am Lagerfeuer, weil er zufällig ein Messer hervorholt.
The Native American frightens the cowboy at the campfire because he is accidentally fetching a knife.

2) Der Indianer fürchtet den Cowboy am Lagerfeuer, weil er zufällig ein Gewehr hervorholt.
The Native American fears the cowboy at the campfire because he is accidentally fetching a rifle.

For the native speakers, looks to NP1 started diverging 450ms after the onset of the connective. Preliminary data from the non-native speakers show a similar trend, however, the effect is smaller and delayed in time starting at around 800ms.

References
Second-language learning is notoriously difficult. It is unclear, though, what kinds of input help speakers learn most successfully. Is language learning easiest when learning contexts are highly variable, allowing learners to abstract away from speaker- and situation-specific variance? Or is it easier when sources of variability are held constant? Previous work has shown a correlation between the number of different L2 speakers with whom someone regularly conversed and their ability to name pictures in that language (Gollan, Starr & Ferreira, 2014), as well as positive effects of accent diversity (Barcroft & Sommers, 2005), but negative effects of picture diversity (Sommers & Barcroft, 2013).

Here, we investigate speaker diversity and semantic context diversity. In three experiments, subjects learned Hebrew words via instructional videos. Five Hebrew-English bilinguals spoke English sentences with a final Hebrew word (e.g., “The baker decorated the ugah [cake]”), accompanied by a picture of the object (i.e., a cake). Five videos per word either showed the same speaker five times or five different speakers once each. Analogously, the videos either involved the same sentence five times, or a different sentence stem, once each. Subjects were tested on their ability to recall the words via picture naming.

Experiments 1a and 1b tested 40 monolingual English speakers and 40 Spanish-English bilinguals respectively. Speaker diversity had no effect, but contextual diversity hindered learning (Exp 1a: p < 0.01, Exp 1b: p < 0.05). Experiments 2 and 3 tested 60 monolingual English speakers in a similar paradigm that used retrieval practice; participants attempted to name pictures before the sentence played. In this way, picture-naming responses were gathered in practice and test phases. Experiment 2 showed again that contextual diversity hindered word learning (p < 0.05), but no effect of speaker diversity. Experiment 3 manipulated speaker diversity between subjects; learning from multiple speakers may have a more global than word-specific effect. Contextual diversity again hindered word learning (p < 0.05) and interestingly, a speaker diversity by context diversity interaction (p < 0.01) showed that participants who learned in five contexts from only one speaker were less likely to learn new words.

Hindered learning in diverse semantic contexts may be a result of the higher cognitive load that learners were placed in: diverse stimuli may distract from word learning. Furthermore, the interaction in Experiment 3 suggests that just one facilitating strategy, in this case multiple speakers or one sentence context, might mitigate harmful learning contexts.
Grammatical gender processing in Dutch learners of Spanish

Jorge Valdés Kroff (University of Florida), Maria Carmen Parafita Couto (Leiden University), Elisabeth Mauder (Leiden University), Leonie Cloos (Leiden University), and Boy Persoon (Leiden University)

In a recent study, Dussias, Valdés Kroff, Guzzardo Tamargo, and Gerfen (2013) showed that both English and Italian learners of Spanish use grammatical gender information encoded in Spanish articles to facilitate the processing of upcoming nouns. This was modulated by two factors: (i) the degree of language proficiency and (ii) the similarities between the L1 and the L2. In this presentation, we report the results of a study investigating whether grammatical gender facilitates noun recognition in Spanish learners with Dutch as an L1. Unlike English, which has no gender, Dutch distinguishes two types of gender. However, unlike Spanish, the Dutch gender system is very opaque. Precisely because of this, it is interesting to test Dutch L1 speakers who are learning Spanish to find out whether having a gender feature in their L1 (which does not correspond to the L2 gender system), will have a facilitative effect on the processing of upcoming nouns.

Sixteen monolingual Spanish participants (control group) and 20 Dutch-speaking learners of Spanish (divided into high and low Spanish proficiency) saw two-picture visual scenes in which items matched or did not match in gender. Participants’ eye movements were recorded while they listened to 28 sentences in which masculine and feminine target items were preceded by an article that agreed in gender with the two pictures or agreed only with one of the pictures. Data were analyzed by comparing the proportion of eye fixations on the objects in each condition. Monolingual Spanish speakers looked sooner at the referent on different-gender trials than on same-gender trials, replicating results reported in past literature. Like the Spanish monolinguals, the highly proficient Dutch-Spanish speakers showed evidence of using gender information during online processing, whereas the less proficient learners did not. The results confirm Dussias et al.’s findings that proficiency in the L2 modulates the usefulness of morphosyntactic information during speech processing. Interestingly, no significant difference was found between the English participants tested by Dussias et al. (2013) and our Dutch participants. Methodological and theoretical implications of our results will be discussed.

References

Speaking two languages with one mind: Language selection errors during switching

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While bilingual speakers switch between their languages every now and then, their performance on selecting and controlling the two languages is not always error-free (e.g., Poulisse, 1999). Nevertheless, given that classical studies on language switching mostly focus on correct responses (e.g., Crinion et al., 2008), little is known about language selection errors in language switching (e.g., language intrusions, or failures to switch languages when required).

In the current study, we investigated all type of errors in language switching, both when speakers fail to switch when required, and when they fail to stay in the same language when it is not necessary to switch. We asked Dutch learners of English to name simple pictures and switch languages according to a color cue. To induce more errors, we also introduced time pressure by applying individualized time limits to participants’ oral responses.

We aim to answer the following questions:

1. What types of errors do speakers usually make when they switch languages? Do they more often make errors on the lexical level (e.g., use a word in the non-target language) or the sub-lexical level (e.g., use the initial phoneme(s) of a word in the non-target language)?

2. What factors induce more (language selection) errors when speakers switch languages? Do they make more errors when switching to L1 than to L2? Do they make more errors when they have to switch language after a long repeat sequence (e.g., naming five or six items subsequently in Dutch before switching to English), or after a short preceding sequence?

3. How do speakers control their language in use, in terms of their behavioral adaptation following these errors (e.g., post-error slowing and increased accuracy)?

Results will be further discussed in terms of language control and error monitoring. Furthermore, the newly established paradigm for inducing language selection errors will also contribute to future electrophysiological studies on error monitoring in language switching.

References


Poster session 2
Metacognitive strategies in learning vocabulary: An experimental study

Ajhar Ahmad
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Abstract- Learning strategies and the factors which affect its use have received much attention. Nowadays, students are no longer seen as passive individuals who only receive information, but they are engaged in learning activities where they can relate the information learned with the existing information. Since last two decades, researchers (O’Malley et Chamot, 1990, Oxford 1990) have tried to categorize language learning strategies. Their research study focused on what is done by students when they learn a second language or foreign language and they found that the success was not due to language learning materials, technique or linguistic analysis but more on how learners themselves can manage their own language learning (Stevick, 1996).

Ellis (1995) mentioned that the choice of learning strategies depends on individual difference and situational and social factors. Some studies found that learners from different cultural groups sometimes have different opinions about the usefulness of various learning strategies. For example, independent learning is the least preferred option among Thai learners (Wasanasomsithi, 2003); and Littlewood (1999) found that the South East Asian students are as more interdependent rather than independent. In this case, Malaysian students who study French as a foreign language and the exposure to it are limited to an academic setting.

Therefore, metacognitive strategies were introduced to the students with the expectation they can control and evaluate their own learning. In this study, we investigated the effectiveness of using metacognitive strategies in learning vocabulary among the Malaysian students.

45 students participated in this study which is divided into two groups. The control group followed the conventional teaching method and the experimental group followed metacognitive teaching method during eight weeks. The t-test and Ancova were used to determine the results of the pre-tests and post-tests. The results showed that the experimental group outperformed the control group in the vocabulary knowledge tests.

References


Bilingualism in Cape Verde: A look at the determiner system

Nélia Alexandre
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Cape Verde (CV) is a former Portuguese colony which is a bilingual speech community (Romaine 2006): Capeverdean, a Portuguese-related Creole language, and Portuguese, the only official language. According to 2010 census, Capeverdean is the L1 of the majority of the population and Portuguese is the L2, typically acquired in classroom contexts after the age of 6.

Considering this specific language setting, I will focus on the acquisition of articles in Portuguese. Although the L2 acquisition of determiners has been extensively investigated (e.g. Ionin, Ko & Wexler 2004, Baldé 2011), no study to date has referred to the case of native speakers of a Creole language. In (European) Portuguese, the definite (o) and indefinite (um) articles encode the semantic values of [definiteness] and [specificity], while in Capeverdean the definite article (kel) is still in process of grammaticalizing and a zero article is the most common way to express those values (Baptista 2007).

For the purposes of this talk, I adapted the experimental gap-filling task of articles from Baldé (2011), and applied it to 81 bilingual speakers in CV, with ages between 11 and 50 years old, distributed by levels of education (‘6th grade’, ‘8th grade’, ‘university attendance’ and ‘graduation’).

I predict that these speakers (i) build a grammar of Portuguese that exhibits some properties of Capeverdean (1-3); and (ii) the ‘level of education’ variable plays a role in the use of articles in Capeverdean Portuguese.

(1) ...Lamento, mas terá que pagar [+definite,-specific] uma [target: a] multa prevista!
‘…sorry, but you’ll have to pay for a [the] provided fine!’

(2) … vou entrevistar [-definite,+specific] o [target: um] médico do Hospital ...
‘I’ll interview the [a] doctor from the Hospital.’

(3) ... Muita coisa: ... Estou mesmo a adorar [+definite,+specific] Ø [target: o] livro.
‘Lots of things: … I’m really enjoying Ø [the] book.’

References


Resolution of anaphora ambiguity in L2

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This paper focuses on the effects of the linguistic context, i.e. syntactic structure and discourse structure, to the coherence of a sentence. Coherence should be related in this article to the degree in which anaphoric relations between a pronominal subject and its antecedent(s) are well established and therefore can be accurately resolved by the listener/reader. Although the linguistic context constitute the main source of resolution in the above relations (Clifton & Dufy, 2001; Charolles, 2002) it is widely acknowledged in the literature that the production and interpretation of pronouns is a task that employs cognitive (theory of mind) and social (eye gaze and pointing) cues as well (see Arnold J. E.; Hendriks P. forthcoming).

The above task becomes more challenging in the case of second language acquisition (SLA). Leaving aside the cognitive, age or social factors, the linguistic context itself can outline interesting ground for investigation in SLA. The results of a such investigation that shed light on the interaction between different sets in the linguistic context of native language (L1) and target language (L2) are to be discussed in this presentation. Besides different sets in the linguistic context we also explore the interaction between the syntactic and discourse components which appears to be remarkably intriguing in the particular set of languages: English (L1) and Greek (L2). With regards to this interaction, Tsimpli and Sorace (2006), have shown that while syntactic properties are acquirable in SLA, elements engaging discourse features may resist acquisition even in the advanced stages of acquisition. The Interface Hypothesis (Sorace and Filiaci, 2006) has conceptualized this inefficient status in SLA by attributing the attested patterns of variability to the syntax-discourse interface. Anaphora resolution of pronominal subjects in Greek, a pro-drop language, by native speakers of English, a non pro-drop one, implicates, as will be shown, specific arrangements at the syntax-discourse interface and thus variability is supposed to emerge. Moreover, the present study will follow the developmental stages, i.e. advanced learners and learners at the ultimate attainment stage at which the acquisition of both syntactic and discursive features is witnessed.

References


Impact of L2 literacy on language production and cognition in healthy bi-literate bilingual adults

Anusha Balasubramanian (University of Reading), Arpita Bose (University of Reading), and Ianthi Tsimpli (University of Cambridge)

Bilingualism research has shown that bilinguals have an advantage over monolinguals on non-verbal executive function tasks, such as inhibitory control [1]. It has also been shown that literacy skills exert a positive impact on oral language production, such as non-word repetition [2] and verbal fluency [3], specifically high literates outperforming low literates. Remaining outstanding question in the literature is to determine if bi-literacy (i.e., ability to communicate in the written form in the two languages that an individual speaks) offers an additional advantage in tasks of language production and executive function. This research investigated the impact of L2 literacy levels on oral language production and executive functions in a group of 40 healthy biliterate-bilingual adults, with varying levels of L2 literacy. L1 was a South Indian language, and L2 was English. Oral language production in L2 was measured using word and non-word repetition and verbal fluency (semantic and letter), and inhibitory control was measured using spatial Stroop task. Data from the first ten participants showed the following pattern of results: as expected words were repeated with higher accuracy than non-words; non-word performance was mediated by levels of literacy in L2; more number of correct words were produced in fluency tasks by individuals with high literacy levels in L2. Preliminary analysis of the spatial Stroop effect showed whilst there was no difference in RT between the high- vs. low-literate individuals, nevertheless, high literate individuals showed higher accuracy for the incongruent trials. These findings suggest a clear role of literacy on the language production abilities; however, its contribution to the executive control needs to be further deciphered. In the conference, we expect to present and discuss data from all our participants to draw firm conclusions.

References


Age of acquisition effect on the second language learning
Aleksandra S. Bub and Olga V. Nagel
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Foreign language learning may benefit substantially when discussed from a cognitive perspective. Cognitive science covers a wide array of topics; one of them is the connection between cognition and language. One of the central issues of cognitive science related to this connection centers on understanding how the brain processes words. Words are used as stimuli in a number of various research projects. Being a stimulus material words are controlled on a number of variables, such as word frequency, word length etc. But one variable is of particular interest in this study – the age of acquisition (AoA).

Age of acquisition is the phenomenon that acquiring a certain piece of information earlier than another results in a faster response time in adulthood which means that words learnt early in life are recognized and produced faster than words learnt later in life.

AoA effects occur at all levels of representation. The idea of its importance have been supported by several experimental tasks such as picture naming, word naming and lexical decision. There is a large body of evidence suggesting that AoA effects manifest themselves in bilinguals while learning the second language (L2) (Birdsong, 2006).

The results of an international research project based on PPVT test administered by Queens University, Belfast and conducted in Tomsk State University, Russia revealed an imbalance in acquisition of basic vocabulary items among native and foreign language speakers at different ages. The test was given to students of the faculty of foreign languages, all of them being coordinate bilinguals (Thiery, 1978). All the participants showed high scores in academic language items and failed so-called play-ground vocabulary. This phenomenon made us look at average age of acquisition for the vocabulary items under questions in both target groups (natives and foreigners) and use it as a variable in LDT to see whether it is a significant variable that affects the response time in word recognition.

References


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Influential factors of second language syntactic analysis: An empirical review
Sendy Caffarra, Nicola Molinaro, Doug Davidson, and Manuel Carreiras
(Basque Center on Cognition, Brain and Language)

Several factors have been considered to be influential on the way the brain acquires and computes a second language (L2) and specifically L2 grammar. The main influential L2 factors are the following: L1-L2 similarity, age of acquisition (AoA), proficiency, and duration of immersion in a L2-speaking community. Authors put forward different theoretical models in order to describe how each of these factors can influence L2 syntactic processing. Several ERP studies investigated the impact of each factor independently on the time course of L2 parsing, without taking into account the joint influence of all those factors on L2 syntactic processing.

The present work attempts to provide a unified view on this topic by including all the L2 factors listed above in a single meta-analysis. Specifically, 41 ERP studies on L2 syntactic processing were analyzed in order to establish whether functional specializations of distinct aspects of syntactic processing (i.e., eLAN, LAN, N400, P600) would be equally influenced by the L2 factors or not.

Logistic regression was performed on the published ERP results elicited by syntactic violations in L2, including the following factors as independent categorical variables: L1-L2 Similarity (2 levels: similar, different), AoA (cut-off: 12 year old; 2 levels: early, late), proficiency (cut-off: 75% of correct responses; 2 levels: low, high), immersion duration (cut-offs: 2, 5 years; 3 levels: short, intermediate, long) and violation type (2 levels: morphosyntactic violation, phrase structure violation). A baseline level was set equal to the percentage of published ERP effects reported when all the L2 factors were supposed to be unfavorable to the L2 attainment (L1-L2 Similarity: different, AoA: late, Proficiency: low, Immersion; Violation Type: morphosyntactic violation).

Results show an increased percentage of eLAN effects reported in the case of phrase structure violations as compared to the baseline. A higher number of LAN effects has been reported when immersion in the L2 country lasted more than 5 years. P600 effects were more often reported at a high level of L2 proficiency. Interestingly, AoA and L1-L2 similarity did not reach significance in any logistic regression.

The present review suggests that functional specializations of distinct aspects of syntactic processing are differently influenced by the L2 factors. Specifically, duration of immersion is particularly influential on early automatic syntactic processes, and proficiency level plays an important role on late controlled processes of syntactic analysis.
Mechanisms of language control in bilinguals: an fMRI study on early and late bilinguals
Francesca Cortelazzo, Barbara Köpke, Xavier de Boissezon, and Vincent Lubrano
(Université de Toulouse)

Studies with multilinguals have shown that different languages may be localized, at least partially, in distinct microanatomical systems located within the same gross anatomical areas (Indefrey, 2006, Lucas et al. 2004). Moreover these studies have shown that control of languages in bilinguals is based on a large cortical-subcortical network associated with executive functions (Lubrano et al. 2012). However, it has repeatedly been suggested that factors such as age of acquisition of the languages and proficiency may be responsible of variation in representation of the languages and in the nature of control mechanisms. The links between age of acquisition, proficiency, or context of language use on the one hand, and language switching and executive functions on the other hand are not clear yet (Hervais-Adelman et al. 2011).

20 highly proficient healthy bilinguals (10 early bilinguals, 10 late bilinguals) were included. FMRI data have been collected while the participants performed a picture naming task in 2 blocked conditions for each language (English or French) or in a switch condition (English and French). Proficiency in both languages was carefully controlled: participants were selected on the basis of their results on the linguistic pre-inclusion battery: placement test of the CECR, verbal fluency and object naming in both languages.

The goal of our study is to contribute to a more comprehensive understanding of the mechanisms underlying language processing and control in bilinguals. We will present first analyses of fMRI results and discuss them with respect to cognitive control. We expect to find more neuronal activation for late bilinguals than early bilinguals, in particular in striatal and posterior areas.

References
In the last years some authors have proposed that dealing with two languages enhances domain-general executive control mechanisms in bilinguals at the behavioral and at the neural level, and that the bilingual experience could alter the brain structure in grey or white matter regions that underlie language and cognitive control processing. These changes have been suggested to be more stable in the elderly because of lifelong bilingual experience contributing to cognitive reserve in aging populations. However, recently a whole body of evidence against such bilingual advantage at the behavioral level has emerged, restricting the so-called bilingual advantage to specific undetermined circumstances. At the same time, the results from neuroanatomical studies looking for grey matter (GM) differences between bilinguals and monolinguals using whole-brain analysis with different variants of the voxel based morphometry (VBM) have provided an inconsistent and opaque scenario, and the precise nature of the reported structural brain changes associated with bilingualism is still under debate. In order to shed light on this issue, we run a cross-sectional study in a group of senior citizens who lived in the Basque Country to test the GM changes as a function of lifelong bilingual experience. Two carefully matched groups of 25 Spanish-speaking monolingual seniors and of 25 Basque-Spanish lifelong bilingual seniors were recruited. To determine potential differences in GM between groups we performed a whole-brain analysis using two different VBM protocols: the VBM8 protocol implemented in the SPM8 software package and the VBM-FSL protocol implemented in the FMRIB Software Library (FSL) software. For each participant, a high-resolution T1 weighted scan was acquired on a 3-T Magnetom Trio Tim scanner. Monolinguals exhibited significantly smaller global GM volume as compared to bilinguals. However, the different VBM analyses investigating focal difference showed a remarkable lack of convergent results. Based on the SPM approach, bilingual and monolingual seniors’ brains did not show significant structural differences, with the exception of a trend towards a decrease of GM volume and density in the right parahippocampal and bilateral anterior cingulum regions, and an increase of GM density in regions of the left cerebellum for bilinguals as compared to monolinguals when a liberal uncorrected significance level was employed. Based on the FSL approach, bilingual seniors’ brains showed a trend towards having greater GM volume in the left cerebellum than monolinguals seniors’ brains. Our results are in line with other pieces of evidence showing no significant GM structural brain changes associated with lifelong bilingualism.
Using pupillometry to investigate second language processing
Leigh Fernandez (University of Kaiserslautern, University of Potsdam, Macquarie University), Barbara Höhle (University of Potsdam), Jon Brock (Macquarie University), and Lyndsey Nickels (Macquarie University)

The Shallow Structure Hypothesis (SSH) argues, second language (L2) speakers, build shallow syntactic representations during comprehension, unlike native speakers [1]. Intermediate gap constructions (a type of filler gap dependency) have been used to test the SSH, which is believed to reactivate the filler at a clausal boundary thus facilitating the later integration of filler and gap. Some research has shown evidence for the SSH using these constructions [2] other research has not [3].

In the current study a novel methodology, pupillometry, was employed to measure processing costs, during the processing of constructions with an intermediate gap constructions by native and L2 (native German) speakers of English. Pupillometry is an indirect measure of the neurotransmitter noradrenaline, which is essential for attention and working memory [4], and is a sensitive measure of filler gap dependency processing [5].

Pupil diameter was recorded during auditory presentation; movement was manipulated (some conditions contained movement while others did not) as well as syntactic movement type (either causing an intermediate gap or not). Pupil slope change at the site of the intermediate gap revealed no differences between conditions or between the two language groups, suggesting that both groups processed the intermediate gap similarly. At the site of the final gap, both groups showed facilitation (greater pupil slope) at the gap in intermediate gap condition compared to other conditions. The native group showed greater pupil change at this segment compared to the L2 group, the pattern of results from both groups showed remarkable similarity, suggesting that the groups were processing these constructions in the same way, contrary to the SSH.

This study provided evidence, using a more direct processing measure, that L2 speakers of English are capable of rich and complex syntactic processing in their non-native language. Given that both groups showed similar facilitation during the processing at the final gap site. Thus, providing evidence against the SSH using a novel methodology, and adds to the growing body of research indicating that L2 speakers may be able to comprehend their non-native language similarly to native speakers

References
Bilingual theory of mind: True and false

Cameron James and Lynne G. Duncan
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Previous literature claims that bilingual preschoolers have an advantage in theory of mind tasks, passing classic false belief tasks earlier than their monolingual peers (e.g. Bialystok & Senman, 2004; Cheung et al., 2010). Theoretical accounts of the advantage emphasise the supposed bilingual advantage in inhibitory control as the source of the advantage (Bialystok & Senman, 2004; Kovács, 2009), as inhibitory control is thought to assist in inhibiting one’s own perspective in order to consider the other’s perspective. Using matched true and false unexpected contents tasks (developed by Fabricius et al., 2010), the current experiment sought to assess whether bilingual children (ages 3;0-5;6) had an advantage in both true and false belief processing, using a more complex schema to solve the task at a given age than monolingual peers. Secondly, the experiment measured inhibitory control, working memory, vocabulary and non-verbal IQ to assess the relationships of these variables to any bilingual advantage and to successful belief-based task performance. The results will be discussed in relation to claims made about the underlying nature of theory of mind in revised simulation theory and the ‘theory theory’.

References


Cognitive mechanisms of disadvantages in second language (L2) speech production have been explained by some accounts yet still under debate. How speakers plan their sentence production may provide an insight about the locus of L2 disadvantages. The number of lexical representations activated before articulation, or planning scope, is claimed to vary depending on the cognitive load of tasks that speakers must handle. Assuming that L2 production requires more cognitive resources, we hypothesized that the size of planning scope becomes smaller in L2 than in L1 and that factors modulating the planning scope may indicate the locus of L2 disadvantages. Dutch-English unbalanced bilinguals (N = 30) participated in a sentence production experiment with the cross-modal semantic interference paradigm, where participants were required to produce sentences using names of two visually displayed pictures in a simple fixed syntactic structure in Dutch (L1) and in English (L2). Auditory distractors that were semantically related to one of the two pictures or unrelated to either of them were presented to investigate the size of planning scope with SOA of -100 ms. The linear mixed-effects model shows no significant effect of semantic relatedness and the significant main effect of naming language. The language effect we found is however inconsistent with previous literature: i.e., L1 is slower than L2. Separate analyses for each language condition to see the effect of lexical factors show that lexical frequency is a significant predictor for L1, while age of acquisition is a significant factor for L2. These results suggest that in unbalanced bilinguals with high L2 proficiency there seem to be no difference in size of speech planning in L1 and L2 but different factors may modulate sentence production processes.
Attention networks functioning in bilingual children: Evidence from Polish-English migrant children living in the UK

Joanna Kolak (University of Warsaw), Zofia Wodniecka (Jagiellonian University), Ewa Haman (University of Warsaw), Marta Białecka-Pikul (Jagiellonian University), and Magdalena Łuniewska (University of Warsaw)

A growing body of evidence shows an enhancement of cognitive control processes in bilingual preschoolers compared to their monolingual counterparts (Bialystok, et al. 2012, Carlson et al., 2008). In the present study, we focus on the functioning of one of the cognitive control components, i.e. attention, in emerging bilingual children. There is an evidence suggesting that bilingual children might outperform their monolingual peers in overall reaction time and accuracy in attentional tasks (Yang and Lust, 2011), demonstrate a particular advantage in the ability to resolve conflict assessed by the incongruency (Engel de Abreu et al., 2012) and benefit more from the spatial cue which helps to align the attention more efficiently (Poarch and Van Hell, 2012).

In this study we examine attention networks functioning in Polish bilingual migrant children aged 4;5 to 6;11 living in the UK and their Polish monolingual peers raised in Poland. We use a child friendly version of Attention Network Test (Rueda, 2004). The task allows to evaluate the three separate attention networks’ processing efficiency (Fan et al., 2002) and it is based on flanker and warning cues manipulation.

The preliminary study (with 30 monolinguals and 30 bilinguals) revealed that bilinguals benefit in the overall reaction time which indicates their better monitoring abilities and are better at maintaining awareness in the congruent condition.

In the present study we aim to include more participants (50 monolinguals and 50 bilinguals) and compare the two groups in attention networks functioning. We will discuss the role of language input and socio-economic context of bilingual development for our results.

The study was carried out within the framework of the European COST Action IS0804 – the Bi-SLI PL project assessing linguistic and cognitive development of bilingual children at the school entrance age.

References


On the cognitive reality of multi-word units in L2 speakers
Saskia E. Lensink, Niels O. Schiller, and Arie Verhagen
(Leiden University)

The cornerstone of usage-based linguistics is the idea that language use shapes language representation. Following this line of thinking, it is expected that combinations of words that frequently co-occur together are likely to be stored as chunks, even if these combinations are regular and semantically transparent. Over the past years there has been a growing body of experimental studies showing that speakers indeed are sensitive to features of multi-word units, suggesting holistic storage of units larger than a word (Shaoul & Westbury, 2011).

Most studies have focused on multi-word units in native speakers. However, establishing to what extent L2 speakers make use of these is an important question that has both theoretical and practical implications. Several studies have found some evidence for the existence of chunks in advanced L2 speakers (Ellis & Simpson-Vlach, 2009; Jiang & Nekrasova, 2007; Siyanova-Chanturia, Conklin & Van Heuven, 2011). However, these previous studies suffer from several methodological shortcomings and suboptimal experimental designs.

Our current study aims to improve upon previous studies by using stimuli with frequencies following a natural Zipfian distribution, as language users are known to be sensitive to probability distributions, experimental design and methods that are well-established in L1 multi-word research, and the newest mixed-effects statistical models. Our pilot study shows that advanced Dutch speakers of English are indeed sensitive to properties of multi-word units.

We will present and discuss the data from the aforementioned experiment and its replication. The focus will be on the optimal design, methods, stimuli, and analysis techniques to answer the question of how to test for the existence of multi-word units in the mental lexicon of L2 speakers.

References


Toward an integrative view of multilingualism in infancy – Understanding language developmental discrepancies between monolingual and bi-/multilingual infants through multi-domain perspectives

Liquan Liu
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Although infants from various language backgrounds pass major linguistic milestones at approximately the same ages, discrepancies along the language developmental trajectories have been spotted between monolingual and bi-/multilingual infants. In the course of native sound development, (temporary) delays, equivalent paces and acceleration effects have all been reported. Additionally, incongruent findings have been found as to whether bi-/multilingual infants show distinct patterns from monolinguals in the cues they adopt to learn new words.

This presentation discusses the discrepancies observed between monolingual and bi-/multilingual infants in language development and argues that explanations may not be restricted to the linguistic field (e.g., frequency of exposure, mutual exclusivity, sound category density), but interact with the cognitive (e.g., memory, attention, inhibition control, theory of mind), neural (e.g., theory of neural commitment, subcortical structure) and social (e.g., social communication) domains.

As an example, previous studies reported that when discriminating and learning non-native contrasts differing in lexical pitch, bilingual infants illustrate faster progression compared to their monolingual peers (Liu & Kager, 2016; Graf Estes & Hay, 2015). In the current experiment, when tested on a violin contrast sharing the same fundamental frequency information as a previously tested lexical pitch contrast, 9-month-old bilingual (p = .036) but not monolingual infants (p = .951) showed robust discrimination. Meanwhile, bilingual adult listeners outperformed their monolingual peers in language (AX/AXB discrimination) and music (Montreal Battery of Evaluation of Amusia) tasks involving pitch perception. We proposed several explanations stemming from the bi-/multilingual environment for these findings as well as previously reported discrepancies across ages and domains:

1. Linguistic: general sensitivity to language, sensitivity to lexical pitch, and possible L1 assimilation/facilitation effects
2. Cognitive: information encoding, recognition memory, and novelty detection
3. Cross-domain: Enhanced pitch or acoustic sensitivity

To sum up, bi-/multilingual language environment influences infant development in linguistic, cognitive, neural and social fields, all of which may provide cues for bi-/multilingual infants to facilitate language acquisition. The dynamic multi-domain interactions favor an integrative rather than a domain-specific view on bi-/multilingualism in infancy. We are currently investigating the influence of bi-/multilingual experience on language processing and social interaction through EEG and behavioural experiments.

References
Lost in translation: Analysis of oral and written narratives for linguistic and cultural minority students

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The children of the Indigenous communities of Hill Tracts (CHT), a remote region in the south-eastern corner of Bangladesh, are among the most illiterate and at the highest risk of dropping out from schools. More than half of all households lack formal schooling, and of those who start school, fewer than eight percent complete elementary education and fewer than three percent complete secondary education (Integrated Regional Information Networks, 2011). Federal government’s deliberate single language policy effectively excludes all Indigenous languages from school curricula of the CHT, despite Indigenous languages being the mother tongue of the majority of the region’s students. Such subtractive practices of focusing on a second language (L2) while ignoring the first language (L1) causes “linguistic limbo” where students have no academic competencies in neither L1 nor L2 (Kosonen, 2008; Spada & Lightbown, 2002). Moreover, the “funds of knowledge” (Moll, Amanti, & Gonzales, 1992, Bigelow & Schwarz, 2010) students bring to the classroom remain unused in favor of a curriculum that is culturally irrelevant or disconnected in large part to their lives.

Recently, a study has been initiated for making use of Indigenous languages and oral story-telling traditions in CHT classrooms. As part of the oral story project, students (n=114) of grade 4-8 interview grandparents and village elders for the folk tales that were passed down through many generations. Students share the stories in classrooms in Marma (L1), the language they speak at home. Students also submit the stories in written format using Bangla (L2) script, the only language children learn to read and write as it is the only language of instruction in the country. In this study, I explore the contents of the oral and written narratives, when students have no literacy in L1, to identify and analyze narrative components that are different, reduced, or lost in translation.

This research can be divided into two distinct stages, 1) developing measures, and 2) conducting analysis of data. A set new measure are developed incorporating and modifying previously used measures. Ratings from three raters were incorporated to achieve higher reliability of measures. Evidence from analysis of data suggests that, in all of the measures, oral narratives, on average, score higher than written narratives. Oral narratives contain more complex description of characters and tend to provide more causal linkage between functional events and use more dialogues and monologues than written narratives. Across the board, oral narratives contain higher word and adjective counts.

There is a dearth of research and publications on the deplorable dropout rates in schools among the indigenous tribes of CHT. This research may inform stakeholders some of the factors that influence student achievement in linguistic minority communities, and by doing so, it can serve as a model in other schools in the area and similar remote regions beyond Chittagong Hill Tracts, and indeed beyond South Asia.
Assessing discourse competence in a multilingual context – The case of Nigerian university students

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The Common European Framework of Reference for Languages (CEFR), as an influential instrument in language teaching, learning and testing set standards for languages and exams assessment with prescribed competency levels. The wide-spread success of the CEFR in Europe means that many classroom teachers outside of Europe are beginning to use it as a reference in their classroom practices.

One of the key competences that teachers have to evaluate in written argumentative texts is the discourse competence. The CEFR defines discourse competence as the ability of a user/learner to arrange sentences in sequence so as to produce coherent stretches of language (CEFR:123). Discourse competence is considered an important aspect of the communicative competence in second language acquisition and thus students are deemed to have acquired this competence when they are comfortable in using discourse elements such as cohesion and coherence especially in writing.

Discourse in multilingual African communities takes a different turn. Studies show that the languages of students from oral-based cultures are remarkably diverse and replete with patterns of multilingual language use and culture-specific discourse devices such as personal narratives, cultural references, inventiveness, and even biblical references. Expectedly, these oral discourse elements are evident in Nigerian students’ written argumentative essays. Assessing these elements is however a challenge to the teacher who is armed with a pre-determined assessment grid based on the framework.

McNamara (2007) suggests that, “(…) the greatest challenge facing language testing is the issue of the context in which the language testing is carried out” (p. 131). This paper seeks to determine what discourse represents in a multilingual context like Nigeria. In line with this, using a corpus of student written essays, it will argue that the approach of the CEFR in terms of its provisions for competence assessment is laudable; it then goes further to outline the challenges of proposing straight jacket criteria for assessment, as one size does not fit all, in this case, the Nigerian multilingual context. Teachers will be encouraged to consider the learning context and set objectives in their assessment practices.

References


Bilingual swearing – Emotions or social normativity at play?

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Bilinguals often switch languages depending on what they are saying. According to the Emotion-Related Language Choice theory (ERLC; Kim & Starks 2008), they find their second language an easier medium of conveying content which evokes strong emotions, such as swear and taboo words. The first language carries too much emotional power, which can be threatening for the speaker. This hypothesis to date has been mainly based on self-reports of bilinguals and observations.

In a covert experiment, Polish-English bilinguals (n=61) translated expletive-laden texts from Polish into English and vice versa, unaware of the real aim of the task. In the resultant Polish target texts, the swear word equivalents used were weaker than in the source text; in the English translations, they were stronger than in the original, suggesting that L2 indeed makes bilinguals more comfortable in expressing content protected by social norms and releases them from constraints such as political correctness. However, significant effect (investigated with the use of Repeated Measures ANOVA) was only observed for ethnophaulisms, i.e. vocabulary deprecating certain social groups. It turns out that the main factor triggering the language choice in bilinguals is not necessarily the different emotional power of both languages, but social and cultural norms.

References

A three-step procedure to detect gender bias on a language test

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Gender differences in language test scores are generally attributed to motivation and attitudes toward reading, to question themes, and to the type of questions asked. This study investigated possible gender bias on the PPVT-IV vocabulary test (Dunn & Dunn, 2007), pioneering a two-pronged approach consisting of descriptive analyses complemented by combined methods for detecting Differential Item Functioning (DIF). A total of 443 adult ESL learners (310 females and 133 males), speaking either French of Polish as their native language, completed all 228 items of the test. Despite the fact that women usually outperform men on language tests (James, 2010), the opposite occurred, apparently as a result of both question types and question themes. Male participants seemed to benefit from the PPVT’s multiple-choice format, as predicted by the literature (e.g. Breland, Bridgeman & Fowles, 1999; Lin & Wu, 2003), but also from the fact that most gender-biased questions favored men rather than women. Our results also suggest that men’s usual high performance on multiple-choice questions might be due not to a stronger risk-taking inclination – as was claimed in past research (Aryadoust, Goh, & Kim, 2011) – but to a more efficient guessing ability. Finally, our analysis process suggests that the high number of gender-DIF items in previous research (Li, Hunter & Oshima, 2014) might be attributed to the use of a single DIF detecting method, and that effective targeting of DIF test items might require a combination of quantitative and qualitative analyses.

References


Relatively little attention has focused on whether and how the effects of linguistic properties of texts influence reading comprehension of health-related information. This issue has become a concern to the UK’s National Health Service (NHS) because, in health settings, reading comprehension problems are associated with poor health status and more hospital admissions (e.g., Baker et al., 2002). In order to uncover what linguistic characteristics of health-related texts predict reading ease, we conducted a study in which we randomly sampled 86 health-related documents from the websites of various NHS England Trusts. The health-related documents were analysed using the Coh-Metrix software (Graesser, McNamara, Louwerse, & Cai, 2004). We conducted correlational analyses and also built two linear models for two readability formulas; the Flesch Reading Ease (Flesch, 1948), originally developed for English first language (L1) speaking children, and the Coh-Metrix L2 Readability Index (RDL2; Crossley, Greenfield, & McNamara, 2008) designed for second language (L2) users. Our results showed that the L1 and L2 readability indices were not significantly correlated, which suggests that they do not measure the same construct. The two measures were also predicted by different linguistic characteristics of the texts. This indicates that different linguistic features might contribute to the ease with which L1 and L2 English speakers comprehend health-related information. The findings revealed that the RDL2 measure was not influenced by sentence length, and the incidence of passive constructions. This runs counter to the advice in NHS information-writing guidelines to avoid long sentences and the use of passive constructions. Therefore, our results suggest that the current guidelines followed by the NHS may not improve comprehension of health-related documents among patients who are ESL speakers.
Does second-language immersion education influence executive functioning?
Morgane Simonis (Université catholique de Louvain), Benoit Galand (Université catholique de Louvain), and Arnaud Szmalec (Université catholique de Louvain, Ghent University)

The phenomenon of bilingualism is increasingly gaining importance in the modern world and is generally considered to positively influence cognitive development especially at the level of executive control (Bialystok, Craik & Freedman, 2007; Carlson & Meltzoff, 2008). A number of more recent studies however have failed to find coherent evidence for executive control advantages in bilinguals (Paap & Greenberg, 2013; Gathercole et al., 2014). As a result, the cognitive implications of bilingualism are currently a big issue of controversy across the scientific community worldwide, and it remains to this day unclear under which circumstances the cognitive benefits of speaking two languages do or do not emerge. One particular method to learn a second language, or become bilingual, is through immersion education, a context where parts of the school subjects are instructed in the learners’ second language. Some of the cognitive benefits associated with early bilingualism have been demonstrated after three years in an immersion education (Nicolay & Poncelet, 2013; 2015). The present study is aimed at examining to what extent the effect of bilingualism may occur through second-language immersion education within a large sample of 476 immersed pupils and 338 controls, who were in the fifth grade of either primary or secondary immersion education in French-speaking Belgium. All participants performed a Simon task and an Attentional Networks Task (ANT) assessing inhibitory control and a version of the Dimensional Change Card Sort (DCCS) measuring mental-shifting. Preliminary analyses show no overall differences in executive control between the immersed group and the control children. The results will be further discussed in relation to control variables such as non-verbal intelligence, the number of years in immersion education and other potentially relevant background variables.
Neural overlap of L1 & L2 semantic representations in bilinguals: an MVPA approach
Eowyn Van de Putte, Wouter De Baene, and Wouter Duyck
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Studies have shown very divergent findings as a consequence of methodological heterogeneity and the lack of distinction between language modalities (comprehension vs. production). The classical fMRI approach can’t distinguish neural overlap as a result of different neural populations representing the different languages within the same brain area or the same neural population within the same brain area representing both languages. That’s why an important goal of this study was to make a shift towards multi-voxel pattern analysis (MVPA) to get a better idea about how specific the neural overlap is between L1 & L2 by looking at prediction accuracies instead of looking at the amount of activation.

More specific, a pattern classifier was trained on the activation pattern associated with the naming, reading or listening to each of the 10 concepts in one language for 5 of the 6 blocks (training data). Subsequently, this pattern classifier was used to classify the activation pattern associated with the naming, reading or listening of the 10 concepts in the corresponding sixth block of the other language (test data). The results showed that the classifier was able to accurately predict which concept was named in the different language modalities (production, auditory comprehension and visual comprehension). Although the brain regions in which significant decoding accuracies were observed did show overlap across the different modalities, we also found brain regions that were specific for the different language modalities.

Overall these results provide evidence for at least partly overlapping conceptual representations across languages.
Jan is fully proficient in Dutch and English. One day he’s at a party where everyone is speaking English. All of a sudden, someone turns to him and says something he doesn’t understand. When they repeat it, he realizes that they’re speaking Dutch and he hadn’t understood because he thought they were speaking English.

In a preliminary survey, more than 70% of Dutch bilinguals reported having experienced a situation like this first-hand. Despite its prevalence, no studies to date have addressed this “listening in the wrong language” (LWL) phenomenon. The present study aimed to shed light on why LWL occurs.

One possible explanation has to do with global language context. As can be seen in the situation described above, what language is expected, based on the context, may play a role in the occurrence of LWL situations. It is possible that LWL states may differentially occur in the bilingual’s two languages, consistent with findings of asymmetric language switch costs (Thomas & Allport, 2000). Another factor that might contribute to the appearance of LWL phenomena is if the speaker has a foreign accent in the unexpected language. Much like orthographic information during reading, phonological information in speech can provide the bilingual listener with clues as to the language being encoded (Weber & Cutler, 2004). It follows that non-native speech, when co-occurring with an unexpected language, may lead the bilingual listener down the wrong language garden path.

The current study explored the role of foreign accent and language in LWL states when expectations for one of the bilingual’s languages were high. Dutch-English bilinguals performed an auditory sentence verification task in which a small portion of the sentences were unexpectedly presented in their other language. In order to determine the effect of language, participants were assigned to one of two groups where the expected and main language of the experiment could be either the L1 or L2. Finally, the effect of foreign accent was assessed by having the sentences delivered by both a native speaker and a speaker with a non-native accent.

References


Naming patterns of adult bilinguals have been found to converge and form a new intermediate language system from elements of both the bilinguals’ languages. This converged naming pattern differs from the monolingual naming patterns of both a bilingual’s languages. We conducted a pre-registered replication study of experiments addressing the question whether there is a convergence between a bilingual’s both lexicons. This study successfully replicated the finding of a converged naming pattern in bilingual adults consistent with a moderate version of the one-pattern hypothesis. The partially merged naming pattern of the bilinguals was found to form a compromise between the naming patterns of both their languages.
The multilingualism of local Chinese in Singapore and Shanghai: A systemic functional analysis

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This paper is an attempt to reveal the relationship between language policy, social context and multilingualism through a systemic-functional analysis of language choice by local Chinese in Singapore and Shanghai. Singapore government has designated Mandarin as the single mother tongue of Chinese community due to the existence of many intelligible Chinese dialects. In recent years, the position of Mandarin in the Chinese community has been challenged by English because of its perceived importance. Consequently, English, Mandarin and Chinese dialects form a set of choices available in Chinese Singaporeans' language systems. In other words, Singapore's language policy creates the multilingual systems of Chinese Singaporeans. As the sole official language in China, Mandarin is the administrative language of China central government and the dominant language of political, educational and economic activities in the country. However, the local Chinese in Shanghai are featured by their extensive use of Shanghainese (or Shanghai dialect) in daily life. The language choice of local Chinese in Shanghai is further complicated by the increasingly frequent use of English in this rapidly internationalized city. More importantly, the social status of Shanghainese and English have never been clarified in the language policies announced by China central government and Shanghai local government. The multilingual systems of Shanghai's local Chinese is thus largely attributable to the special social context in the city, which is distinguished from the situation in Singapore. This paper first examines the language choice actually made by local Chinese in Singapore and Shanghai in terms of the three variables of Field, Tenor and Mode. In particular, the study investigates: 1) what kinds of content or topic of social activities are related respectively to the choice of a particular language; 2) how the role relationships among people are involved in their language choices; and 3) whether something is spoken or written affects the choice of languages. The findings of the examination develop into a framework predicting the likely language choices in a specific context of situation. This paper also explores how the adjustments of language policy in Singapore and China give rise to the change of language choice in certain situations and how the language choice is in turn affected by the variation of social context. Systemic functional linguistics is powerful for the description of the internal organization of a language from a social perspective. This paper argues that systemic-functional theories are also suitable for explaining language choices in the social context directly or indirectly affected by language policy.
List of participants

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Notes