

<b>Institution:</b> University of Edinburgh		
<b>Unit of Assessment:</b> 26 (Modern Languages and Linguistics)		
<b>Title of case study:</b> Research on multilingualism enhances public perceptions, professional and commercial practice, and language policy		
<b>Period when the underpinning research was undertaken:</b> 2008 – 2018		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b>	<b>Role(s) (e.g. job title):</b>	<b>Period(s) employed by submitting HEI:</b>
Antonella Sorace	Professor of Developmental Linguistics	Oct 1988 – present
Thomas Bak	Reader in Psychology	Apr 2006 – present
<b>Period when the claimed impact occurred:</b> August 2013 – December 2020		
<b>Is this case study continued from a case study submitted in 2014?</b> N		
<b>1. Summary of the impact</b> <p>A centre dedicated to research and engagement on multilingualism, Bilingualism Matters (BM) has had impact in three main areas:</p> <ol style="list-style-type: none"> <li><b>Public discourse:</b> BM shaped the way multilingualism is presented and discussed through its significant engagement with the media, arts, and targeted events for parents and teachers in the UK; internationally, it established a model for public engagement via its 25 centres across Europe, Asia and North America.</li> <li><b>Business:</b> BM led to the creation of an award-winning social enterprise teaching languages to older people and dementia patients; BM drove the redevelopment of an English-language assessment tool for Pearson English.</li> <li><b>Language policy in Scotland:</b> BM informed the implementation of government strategy for language learning in Scottish schools; BM also highlighted the importance of supporting home languages in the Scottish Government's strategy for integrating refugees.</li> </ol>		
<b>2. Underpinning research</b> <p>Research by Sorace and Bak has explored different forms of multilingualism across the lifespan, from simultaneous and consecutive child bilingualism, child second language learning at school, adult second language learning over different life stages, including cognitive ageing, stroke and dementia, and bilingualism in indigenous, immigrant and refugee languages. Key insights that have led to the specific impacts described in this case study are outlined below.</p> <p><b>Adult language learning and non-balanced bilingualism</b></p> <p>Much bilingualism research has focussed on early, simultaneous bilingualism: where a child is presumed to be exposed to roughly equal amounts of high-quality, native speaker input in multiple languages, from infancy. This research is sometimes perceived (by parents and practitioners) to have limited applicability to the more common UK experience of second language education, where linguistic input in the second language is limited, later, and less likely to come from native speakers. Sorace and Bak have applied paradigms from bilingualism research to adult language learners in a non-balanced environment, and showed a measurable improvement in executive functions such as attention, following a period of adult second language acquisition [3.1], even over short timescales: some effects were found after a one-week intensive (residential) language course [3.2].</p> <p>Relatedly, Bak has examined bilingualism and language acquisition in healthy and pathological ageing. This includes the first study examining the impact of bilingualism on</p>		

cognitive ageing controlling for childhood intelligence and therefore addressing the problem of “reverse causality” [3.3]. This study is part of a larger body of evidence, including studies of bilingualism in stroke, Frontotemporal Dementia and post-stroke aphasia, as well as theoretical papers explaining the importance of conducting studies in different populations, and the most thorough analysis to date of confounding variables in bilingualism research.

### Interaction between first and second languages

Other work by the centre investigates the reciprocal effects of the first and second language in bilingual development. For example, Sorace synthesises the important strands of linguistic research conducted since the early 2000s on the sources of difficulties for bilingual children. She shows that the degree of similarity between the two languages does not correlate with ease of bilingual development: this depends on the type of language structure and on the frequency of exposure to both languages – something that parents and teachers are often not aware of [3.4].

A common misconception is that children who speak English as an Additional Language (EAL) will not only struggle to learn English (due to posited “interference” from the home language), but that any attempt to introduce additional languages at school will lead to further confusion. In work specifically focussed on the experiences of immigrant children, Sorace and Robinson found that children from refugee backgrounds, whose “home” or “family” language is not English, performed better on a Spanish learning task than children from otherwise monolingual backgrounds [3.5].

### Political and social context of multilingualism

Further work by the centre has sought to draw these strands together and address the debate around the so-called bilingual advantage in a measured way. Bak and Sorace are clear that the most important benefit of bilingualism is the ability to use more than one language. Their research frames discussion around language learning in social and cultural context. For example, Bak and Mehmebegovic [3.6] explore the social underpinnings and implications of bilingualism research, challenging the idea of monolingualism as the normal or default state for a global population.

### 3. References to the research

- [3.1] Vega-Mendoza M., West H., **Sorace, A., Bak, T. H.** (2015). The impact of late, non-balanced bilingualism on cognitive performance. *Cognition* 137, 40–46. <https://doi.org/10.1016/j.cognition.2014.12.008>
- [3.2] **Bak, T. H.**, Long, M. R., Vega-Mendoza, M, **Sorace, A.** (2016). Novelty, challenge, and practice: The impact of intensive language learning on Attentional Functions. *PLoS One* 11(4), PONE-D-15-47787R2. <https://doi.org/10.1371/journal.pone.0153485>
- [3.3] Alladi S., **Bak, T. H.**, Duggirala V., Surampudi B., Shailaja M., Shukla A. K., Chaudhuri J. D., Kaul S. (2013). Bilingualism delays age at onset of dementia, independent of education and immigration status. *Neurology* 81(22), 1938–1944. <https://doi.org/10.1212/01.wnl.0000436620.33155.a4>
- [3.4] **Sorace, A.** & Serratrice L. (2009). Internal and external interfaces in bilingual language development: beyond structural overlap. *International Journal of Bilingualism* 13(2), 195–210. <https://doi.org/10.1177/1367006909339810>
- [3.5] Robinson, M. & **Sorace, A.** (2018). The influence of collaborative language learning on cognitive control in unbalanced multilingual migrant children. *European Journal of Psychology Education* 34(1), 255–272. <https://doi.org/10.1007/s10212-018-0377-x>

- [3.6] **Bak, T. H. & Mehmedbegovic, D.** (2017). Healthy Linguistic Diet: the value of linguistic diversity and language learning across the lifespan. *Language, Society and Policy*. <https://doi.org/10.17863/CAM.9854>

#### 4. Details of the impact

##### Changed public discourse

Since August 2013, Bilingualism Matters researchers have shared their research on language learning and multilingualism in over 90 media articles for major international and national outlets. BM's research has appeared on television (BBC1's *The Truth About Dementia*, *Trust Me I'm a Doctor*), radio (BBC World Service – 1.3M weekly listeners, BBC Radio 4 – 10.9M weekly listeners, BBC Radio Scotland – 767K weekly listeners), and print/digital newspaper imprints (e.g., *Newsweek*, *The Sunday Times*, *The Guardian*, *The Daily Telegraph*, *The Sydney Morning Herald*, *The Irish Times*, and *Het Parool* (Netherlands)) [5.1, pp. 29–33].

Such media coverage has helped **shape public discourse around bilingualism**, for example in 2016, Sorace was quoted in an article on the benefits of bilingual education ("6 Potential Brain Benefits of Bilingual Education") published by National Public Radio in the USA (NPR; approximately 18.2 million weekly website visitors). This was also shared on NPR's Facebook page, receiving 23,000 likes, 13,000 shares, and 1,200 comments, with one reader stating:

"Being bilingual myself and CHOOSING to place my son in an immersion school is not even thought about elsewhere in other developed countries! It's not only good for the brain, but also places a natural and HUGE emphasis on acceptance!" [5.1, p. 15].

Since August 2013, BM in-person public events have reached over 12,000 people (350 events for the public, parents, and education practitioners) [5.1, pp. 34–50]. Many participants at these events indicate BM has changed their knowledge of, or attitudes or actions towards multilingualism. For example, participants at school events held in Edinburgh in 2017 stated:

"Excellent talk! Received a lot of input on bilingualism and helped bust myths about it. Will persevere and get my child to be bilingual."

"Made me realise how important bilingualism is for my family and I understand a bit better now, what to do to support my daughter" [5.1, p. 25].

The team's collaboration with Theatre Sans Accents (an Edinburgh-based bilingual theatre company) and the Polish Cultural Festival Association culminated in 2018 with the creation of a new Edinburgh Multilingual Stories Festival (1,900 attendees over two years) [5.1, pp. 22–25]. Involvement in the Festival, and the research-based evidence conveyed through it, has inspired **transformation in artistic practice** and new artistic works, with a participating bilingual artist noting:

"... I am currently working on a very exciting project [...] blending the musical traditions of Scotland and Northern Italy and using the dialect of my small town in Italy, in an attempt to preserve a 'dying' language whilst confirming the absolute need for blending cultures in art. In short, thanks to the festival, I have made multiculturalism and bilingualism a lasting feature of my artistic practice and my development of the concepts is ongoing" [5.1, p. 24].

BM has founded an international network of 25 similar centres promoting research-based public engagement in diverse national and local contexts (23 new branches launched since 2013; 16 in Europe, 5 in North America, 2 in Asia, with over 200 people worldwide delivering activities from their local branches) [5.1, p. 11]. These international branches draw on BM's research and experience in influencing the public domain while adapting it to the local context. Professor Judith Kroll (UC Irvine), a psycholinguist instrumental in driving the development of the BM branch network in the USA commented:

“There is transparent communication between the branches and the network hub in Edinburgh. There is sharing of materials and ideas in the form of reports, newsletters, etc. But here is the point that is critical in my view: The amazing growth of the BM network to the level that exists in 2020 can be attributed to the idea that it provides a model but not a fixed template” [5.1, p. 14].

### Impact on business

In 2015, following media coverage of Bak’s research [3.3] on languages and ageing, a former lawyer with an interest in languages was inspired to establish Lingo Flamingo, a Glasgow-based **social enterprise providing language lessons for older people** [5.2, 5.3 items 12–14]. The service has since expanded to include dementia patients and carers, with Bak and colleagues helping to design teaching materials and training. Lingo Flamingo works with over 30 national and local care providers such as Loretto Care, Alzheimer Scotland, Balhousie Care, and Renaissance Care and its activities cover 12 Scottish local authorities, spanning South Ayrshire and Glasgow City to the City of Edinburgh and Aberdeen City. The initiative has recently expanded into Southern England [5.4].

As of May 2020, Lingo Flamingo has delivered over 2,250 classes in 250 locations, and the benefits resulting from its activities, and the science underpinning these, have received media coverage from the likes of BBC2’s *Trust Me I’m a Doctor* and *The Guardian* (23M monthly online readership) [5.3]. The initiative has been praised by those witnessing the benefits it brings, with the manager of a Bonnybridge care home stating:

“Lingo Flamingo’s foreign language workshops have proved very popular with many of our residents. It is fantastic to see how they respond to the activities and the enjoyment they get out of every session. Dementia can be a very isolating and frightening illness and we are delighted to be working with Lingo Flamingo to help residents use these inspiring techniques to help slow down the effects of the disease” [5.3].

A family member of a Lingo Flamingo student called the classes “truly amazing”, stating:

“My mum was a great reader... and when she was diagnosed with dementia the reading kind of went away. But since going to the classes, she’s actually been picking up the magazine, and sitting, as she would have done at home, with the magazine on her knee, flicking through it” [5.3].

The scheme was runner-up in Scotland’s Converge Challenge 2015, it won the 2016 Scottish Young Edge award for entrepreneurs (GBP10,000), and it was named as one NESTA’s & *The Observer*’s “New Radicals 2016”, which recognised it as being an “organisation changing the UK for the better”. Scotland’s First Minister, Rt Hon Nicola Sturgeon MSP, said:

“Lingo Flamingo is a wonderful initiative, making education more accessible to vulnerable members in our society. It is another illustration of the great talent that we possess here in Scotland to address social challenges in innovative ways” [5.3].

In 2016, Sorace was approached by **Pearson English**, part of the world’s largest education company, Pearson plc (30,000 employees in more than 70 countries). Pearson commissioned BM to evaluate their new English Language Proficiency Assessment, drawing on BM’s peer-reviewed research. This “fed into the redevelopment of the product”, relaunched in late 2019, and “helped inform [Pearson English’s] future research direction” including their understanding of the number of hours required to make progress in a foreign or second language for primary-school-aged learners. Pearson also shared BM research [3.3, 3.4, 3.6] at international conferences for EAL teachers (estimated reach: 3,000 teachers across Asia, the Middle East, and Latin America), which “increases [the teachers’] motivation as well as their awareness of the relevant research” [5.5].

**Changed Scottish language policy**

Since 2013, BM has worked with Education Scotland (Scottish Government executive agency) and Scotland's National Centre for Languages (SCILT) to support the implementation of the **national 1+2 languages policy**, in which all primary school children in Scotland learn two additional languages. According to Education Scotland, Sorace's research on language learning in schools [3.4, 3.5], helped revise the policy around the second additional language and "gave us the confidence to change the implementation criteria [...] allowing for more flexible models of delivery" [5.6]. The revised policy affects approximately 25,000 teachers and approximately 500,270 pupils in 2012 primary schools across Scotland. Uptake of the second language in schools has increased from 33% (2017–18) to 42% (2018–19): Education Scotland attribute this increase in part to the policy revision informed by Sorace's work [5.6].

BM research [3.2, 3.5] also informed how SCILT engage with parents and teachers about language learning: "The research of Sorace and her colleagues informed our approach to promoting language learning in Scotland: both the information we used, and the way we present it" (SCILT development officer). For example, BM research informed resources on SCILT's website (approximately 4,500 visitors over 6 years) and an information leaflet about language learning, produced with the National Parents Forum of Scotland (approximately 3,000 copies distributed) [5.7].

SCILT were also a partner on Scottish Government's "New Scots" strategy: a multi-agency programme of work around **refugee integration**. SCILT's development officer notes that "research by the Bilingualism Matters team directly informed the implementation of national strategy around refugee integration, by contributing to the development of in-person and online training for education practitioners" [5.7]. The success of this online course (1,288 learners across UK, North America and Europe, as of December 2018) is cited in the Scottish Government's progress report: at the start of the course, 13% teachers rated their confidence in supporting EAL learners as high, versus 62% at the course end [5.7]. More broadly, BM's message that "maintaining one's mother tongue does not hinder English language acquisition, and that multilingualism should be encouraged" was also referenced in the government review of "New Scots", and in the renewed strategy for 2018–22 [5.8, p. 32]. BM's work on "New Scots" is underpinned by their research on the wider context of multilingualism [3.6], in which they highlight the value of indigenous, migrant and refugee languages: the cognitive, psychological, cultural and social benefits of multilingualism are not dependent on the number of speakers or the prestige or economic and political power of a language.

**5. Sources to corroborate the impact**

- [5.1] Evaluation report summarising Bilingualism Matters media, public engagement and branch activities, report commissioned by the University of Edinburgh, 2020
- [5.2] Lingo Flamingo activity report and portfolio, 2017
- [5.3] Compilation of articles covering work of Lingo Flamingo with stakeholder responses
- [5.4] Summary of Lingo Flamingo's care sector engagement
- [5.5] Statement from Pearson English (Pearson Education Limited), 2019
- [5.6] Statement from Education Scotland, 2021
- [5.7] Statement from Scotland's National Centre for Languages' Former Development Officer, 2019
- [5.8] Engagement analysis of the New Scots Refugee Integration Strategy 2018 to 2022, Chapter 7 "Language", Scottish Government, 2018