Institution: Queen Mary University of London
Unit of Assessment: 26A Modern Languages and Linguistics
Title of case study: Constructed Languages and Teacher Engagement with Linguistic Concepts in the National Curriculum.
Period when the underpinning research was undertaken: 2004-2019
Details of staff conducting the underpinning research from the submitting unit:

Name(s):	**Role(s) (e.g. job title):**	**Period(s) employed by submitting HEI:**
David Adger	Professor	2002-Present
Daniel Harbour	Professor	2003-Present
Coppe van Urk	Senior Lecturer	2015-Present

Period when the claimed impact occurred: 2015-2020
Is this case study continued from a case study submitted in 2014? N

1. Summary of the impact

A diverse range of 55 schools/educational institutions, including a national educational charity, benefitted from a new approach to delivering the linguistic concepts mandated by the National Curriculum. Linguistics research at Queen Mary University of London on grammatical diversity fed into training and teaching materials to allow students to create their own languages from scratch, engaging creativity in an area that can be uninspiring and dry. Teachers in the schools changed aspects of how they teach linguistic concepts, and this impacted all stages of school education: phonics (KeyStage1), grammatical terminology (KS2), literacy (library hours at KS3/KS4), conceptual framework teaching (A-Level English KS5), across a range of state, academy and independent schools, and was implemented through CPD, extra-curricular activities and curricular changes.

2. Underpinning research

A body of Queen Mary research has analysed a diverse range of grammatically very different languages (including Kiowa [3.1], Scottish Gaelic [3.2], Dinka [3.5], Fijian [3.6], among many others [3.3, 3.4]) via an approach that treated the surface diversity of the languages as arising from interactions of a number of simple grammatical options. Although the same options are available to all languages, different choices lead to rich grammatical variation. For example, take the order of words in a simple phrase meaning 'The girl's book'. Scottish Gaelic, English, and Kiowa make different choices in how they order their versions of this. In English 'the girl' precedes 'book', in Gaelic, the equivalent follows 'book', while in Kiowa, the two may be separated from each other in the sentence. Similarly, different languages grammatically mark different parts of the phrase to signify the possessive meaning. Simplifying, English adds ''s' to 'the girl', Dinka changes the form of the word for 'book', while Fijian can change both. A similar approach to language diversity can be applied to language structure at the levels of sounds, words, and meaning. These grammatical differences can be understood as different 'design choices' in the different languages and the whole body of research developed a theoretical understanding of what these 'design choices' are.

The researchers had the idea of flipping the concept of 'design choices', using it not as a theoretical concept to analyse languages, but rather as a way of creating languages, linking it to Adger's long-standing interest in Constructed Languages ('Conlangs', section 4 below). Using languages from Queen Mary research, the department developed training and materials for teachers to use with students to invent languages from scratch. The materials use the relevant linguistic concepts but in a way that allows teachers and students to be creative, as opposed to analytical.

The materials drew directly upon the research on the grammar and morphology of noun phrases that Adger reports in [3.2], which was funded by the Leverhulme Trust. It also drew upon research on the free word order phenomena explored by Adger and Harbour in their AHRC grant, reported in [3.1], and on work researching grammatical number and person

(plurals, duals, etc.), reported on in [3.3] and [3.4], funded through Adger and Harbour's second AHRC grant. Van Urk's research on Dinka, funded by the NSF, and his later work on Fijian, reported in [3.5] and [3.6] below, fed into the materials on the morphology of number, on the organization of phrases and sentences, and how languages express questions versus statements.

3. References to the research

[3.1] Adger, D., Harbour, D., & Watkins, L. (2009). *Mirrors and Microparameters: Phrase Structure beyond Free Word Order* (Cambridge Studies in Linguistics). Cambridge University Press. doi.org/10.1017/CBO9780511657375
[3.2] Donati, C. (2014). A syntax of substance. Cambridge, MA: MIT Press, 2013. *Journal of Linguistics*, *50*(2). doi:10.1017/S0022226714000073
[3.3] Harbour, D. (2016). *Impossible Persons*. MIT Press. muse.jhu.edu/book/48672.
[3.4] Harbour, D. (2014). Paucity, abundance and the theory of number. *Language*. 185-229. doi.org/10.1353/lan.2014.0003
[3.5] van Urk, C. (2018). Pronoun copying in Dinka Bor and the copy theory of movement. *Natural Language & Linguistic Theory*, *36*(3), 937-990. doi.org/10.1007/s11049-017-9384-x
[3.6] Van Urk, C. (2020). Object licensing in Fijian and the role of adjacency. *Natural Language & Linguistic Theory*, *38*(1), 313-364. doi.org/10.1007/s11049-019-09442-1

Evidence of quality of research

These six references are selected from a larger body of work. They are published by prestigious international publishers who insist on rigorous peer-review (Cambridge University Press, MIT Press), or in highly selective peer-reviewed journals. Much of this work was funded via competitive research funding as follows:

[EQR.3.1] Adger [PI]. (2004-07). Information Structure and Word Order in a Polysynthetic Language. Awarded a grade of Outstanding [APN17572]. *AHRC*. GBP192,000.
[EQR.3.2] Adger [PI]. (2007-2009). The Grammar-Meaning Connection: Evidence from Scottish Gaelic [F07476Y]. *Leverhulme Trust*. Major Research Fellowship. GBP118,000.
[EQR.3.3; 3.4] Adger [PI]. (2009-2013). Atomic Linguistic Elements of Phi (ALEPH) [AH/G019274/1]. *AHRC*. GBP275,541.
[EQR.3.5] Coppe van Urk [Co-I]. (2014-2016). 'Case Marking and the Left Periphery in Dinka' [BCS-1440427]. *National Science Foundation*. USD5,860.

4. Details of the impact

Adger was contacted in 2015 by ITV to design two languages for a fantasy show, *Beowulf: Return to the Shieldlands*, which aired in 2016 attracting about 2,500,000 viewers where the producer of the shows states:

> '[Adger's] work was of real benefit to the production team, feeding into the overall production process. It helped to make us aware of the importance of linguistics in building a credible world, as well as influencing choices we made in presentation of the creatures in the series, and helping to create a sense of authenticity in the final product.' [5.2]

This experience led him in 2016 to develop an undergraduate module on constructing languages based on his own research. Following the success of this, Adger, van Urk and Harbour integrated their research into new teaching materials for KS4 students at a Widening Participation Summer School in 2017 held at Queen Mary. Adger and van Urk then set up the Queen Mary Invented Languages Scheme, with the aim of developing teaching materials and training for all levels of education using the method. The first partnership was developed with the Centre for Literacy in Primary Education (CLPE), a major national educational charity, whose director had become interested in the idea after reading a blog by Adger.

Development of educational training implemented in the National Curriculum

CLPE had identified that a method for improved engagement with both phonics and the grammatical terminology elements of the KS1/KS2 parts of the National Curriculum was needed. CLPE and the Queen Mary team worked together to develop CPD training for primary education (March 13th 2019; March 10th 2020; March 11th 2021 rescheduled due to COVID-19). 15 Primary Schools and other organizations, including international organizations (e.g. Fettes College in Guangzhou, China; the Queen Rania Organization of Jordan), sent individuals to be trained in how to use the technique. CLPE note from their formal evaluation that '100% of participants rated the course as effective professional development' and CLPE further state:

> 'we use[d] the results of the research […] in co-creating materials for training primary school teachers […] We are keen to embed this approach in our training and development programme moving forward and after revising and repeating the delivery in 2019/20, the course will be part of our specialist course programme in 2020/21'.

The 'very positive impact' of this 'rich addition to the programme' has resulted in CLPE integrating it into their specialist course program. These courses are offered each year and function as CLPE's primary way to provide CPD training to primary schools in particular areas of need [5.1].

Changes in school and public engagement with constructed languages

Adger documented the Beowulf experience in his 2019 popular science book *Language Unlimited* (approx. 4000 hardback/kindle sales August 2019-2020 [5.2]) and in a number of articles, blogs and podcasts aimed at the general public (YouTube Public Lecture for ABRALIN, BBC Science Focus, Slate, two Psychology Today blogs) and at teachers (a podcast for In Plain Language, articles for E-Magazine, with downloadable materials [5.6], an online discussion for the English Shared Futures conference which involved teachers from Primary to Tertiary education [5.2]). Because the Constructed Languages approach directly engages students' creativity, it provides a new way to cover the grammatical aspects of the National Curriculum which teachers and their advocates have found dry and challenging to engage with (e.g. Rosen, *The Guardian*). This meant that teachers who had found out about the project via the book, articles, blogs, twitter and podcasts, spread the word, leading to further partnerships (e.g. Letters from Farnborough College, Bilborough [5.4]).

By June 2020, a diverse range of 55 Schools and educational organisations (including CLPE) have benefitted from the Queen Mary Constructed Languages approach in different ways [5.3 provides an index of activities, schools and evidence; 5.4 provides letters from Schools detailing their engagement and/or listing other schools that have taken part in projects they convened; 5.5 provides evaluation forms where available as further feedback]:

  (i)   enhancing CPD programmes by integrating Constructed Languages sessions (CLPE involving 15 schools, e.g. Eltham School, Farnborough Academy)
  (ii)   sending students to specialised workshops (e.g. Bath High, Putney High)
  (iii)   establishing Constructed Language activities to enrich extra-curricular offerings (e.g. Woodbridge School's World Book Day, Christ College Finchley's two-day workshop)
  (iv)   using Queen Mary materials to provide new ways of learning in outreach events (e.g. Westminster School's Platform Plus, involving seven other schools; Sutton School's Languages Festival, involving eight other schools; INSET day at Queen Mary with seven schools)
  (v)   using materials for supporting curricular learning through student projects (Hailyborough High, Queens College).

Enhanced pupil engagement and improved teaching materials

Some schools have engaged in different ways. Uxbridge Academy in 2019 used Queen Mary research to develop ongoing legacy materials for the Frameworks section of A-level English

Language (KS5), with teachers commenting 'this has led to measurable improvements in student engagement and results'. Following a CPD session, Farnborough College found the method 'so inspiring that we decided to integrate the ideas into our English Language A-level curriculum as part of the Language Frameworks topic' and commented that it was especially helpful for 'new teachers and those with a non-linguistic background to develop their subject knowledge further' [5.4]. The lessons (due to take place in May/June 2020) were postponed to May/June 2021 because of COVID-19. Woodbridge School Librarian, who attended Queen Mary CPD training, and Woodbridge Head of English at KS3/4, co-created materials with Adger for use with over 300 Year 8 students. The school considers this 'an exciting and innovative way of maintaining phonological and grammatical knowledge learned at KS1/KS2 and often lost at KS3 and 4' [5.4]. The planned use of this material (May 2020) was unfortunately postponed to May 2021 because of COVID-19, although, like Farnborough, the impact on the teaching plans and curriculum is in place, with future expansion planned.

Further activities have been planned for the 2021-22 academic year (e.g. LEH School CPD; Haberdashers CPD and Workshop) and Adger and van Urk have co-authored an article on the approach, to create further pathways to impact [5.7].

5. Sources to corroborate the impact

[5.1] [Testimonial] CLPE, Learning Programmes Leader. On the success of the Constructed Languages approach and how that has led them to integrate it into their programmes on a long-term basis. Copy of CLPE Course Planning Document. Formal Evaluations of CPD from CLPE. [Corroborator 1]

[5.2] [Testimonial] Links to viewing figures for Beowulf and email from producer about how Adger's invention of the two languages for the show impacted on the production; evidence for sales of Language Unlimited; links to interviews, articles and podcasts by Adger on Constructed Languages in education.

[5.3] [Testimonial] Index of participating Schools with activities, dates of events, and specification of evidence.

[5.4] [Testimonial] Uxbridge Academy, including student improvement statistics; Farnborough College; Woodbridge School; Westminster Platform Director; and Christs College corroborating quotes/effectiveness of engagement/lists of participating schools. Invitation/Thanks emails, including lists of participating schools in events from Bedales, Eltham, Haileybury, Hampton, LEH, Queens, Sutton, Bilborough, Drayton Manor School) [Corroborators 2-5]

[5.5] [Feedback] Sample of student and teacher created materials (photographs of events; PDFs of created materials, Evaluation Forms for events confirming attendance).

[5.6] [Press] Copies of E-Magazine invited articles and materials

[5.7] [Book] Adger, D. & van Urk, C. (2020). Three conlang projects at three educational levels. *Language Invention in Linguistics Pedagogy*, 49-68. Oxford: Oxford University Press. doi:10.1093/oso/9780198829874.003.0005