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Adapting the Multilingual Assessment Instrument for Narratives (MAIN) to Scottish Gaelic

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This paper describes the rationale for the adaptation of the Multilingual Assessment Instrument for Narratives (LITMUS-MAIN) (Gagarina et al., 2012, 2015, 2019) to Scottish Gaelic (Gaelic) and presents some preliminary results from the macrostructure measures. Gaelic is a heritage minority language in Scotland being revitalised through immersion education, which spans across all levels of compulsory education (preschool, primary and secondary level). MAIN was adapted to Gaelic for two reasons: (i) to gauge the language abilities of children attending Gaelic immersion schools using an ecologically valid test, and (ii) to help identify areas of language impairment in children with Developmental Language Disorders within a broader battery of language tasks. Preliminary results from the macrostructure component indicate a wider range of Gaelic language abilities in six- to eight-year-old typically developing children in Gaelic-medium education. These results set the stage for future use of the tool within this context.

1 The Multilingual Assessment Instrument for Narratives in Scottish Gaelic

The Language Impairment Testing in Multilingual Settings – Multilingual Assessment Instrument for Narratives (LITMUS-MAIN, hereafter MAIN; Gagarina et al., 2012, 2015, 2019) is a narrative task that comprises four similarly structured picture-based stories that children are asked to tell or retell. It was developed during the COST Action IS0804 *Language impairment in a multilingual society: Linguistic patterns and the road to assessment* (Armon-Lotem, de Jong, & Meir, 2015) with an aim to provide an ecological way of gauging grammatical and higher level of discourse organisation abilities in typically developing bilingual children and in bilingual children with Developmental Language Disorder (DLD).

Scottish Gaelic (hence Gaelic) is a heritage minority language in Scotland, currently being revitalised through immersion education. Despite the increase of the number of pupils in

Gaelic medium education (GME), there is lack of language assessments in Gaelic that can inform us about the language development of children in GME: both typically developing and language impaired. In this context, the addition of MAIN to the offers a promising tool for developmental, educational and clinical study.

The present chapter is organised as follows. In section 2, we discuss the revitalisation of Scottish Gaelic through Gaelic-medium immersion education (GME) in Scotland, and section 3 presents why the adaptation of MAIN is important for GME. Sections 4 and 5 present the properties of Gaelic and the steps taken and obstacles faced when adapting the tool to Gaelic, respectively. Section 6 describes the first phase of the study in supporting children in GME and presents some preliminary results on macrostructure. We conclude with some future directions in Section 7.

2 Scottish Gaelic and its revitalisation through Gaelic-medium education in Scotland

Gaelic, despite its minority status, is one of the official languages of Scotland since the Gaelic Language (Scotland) Act 2005 was passed. In the 2011 Census, the total number of people in Scotland recorded as being able to speak and/or read and/or understand Gaelic was 87,056. Of these, 58,000 people (1.1% of the population) aged three and over in Scotland were able to speak Gaelic. Within this group, the number of people who could speak, read, understand and write Gaelic in 2011 was 32,000, 0.6% of the population aged three and over. Apart from Gaelic being spoken in the Highlands and Western Isles, there is also a high degree of urbanisation within the Gaelic speaking community, with large numbers of Gaelic speakers living in Aberdeen, Edinburgh, Greater Glasgow and Inverness.

Gaelic-medium education (GME) is an immersion model distinct to Scotland that spans across preschool, primary and secondary education. By targeting the acquisition of both Gaelic and English, it intends to make children fully bilingual by the time they enter secondary education at the age of 12 years. In Gaelic-medium primary education (GMPE), Gaelic is prioritised in the first three years. English is slowly introduced, although Gaelic remains the main medium of instruction in lessons (O'Hanlon, Paterson, & McLeod, 2012). Pupils entering GMPE come from a variety of backgrounds. Many pupils come from families with no Gaelic at home and are immersed in Gaelic at school only (Stephen, McPake, McLeod, Pollock, & Carroll, 2010) with approximately 18% of parents being native speakers of Gaelic (O'Hanlon et al., 2012). Given that nursery provision may or may not be attached to school(s) in regions that offer GMPE, pupils may enter primary schools with mixed former experience of formal instruction in Gaelic. In 2018-19 there were 56 preschools, 60 primary schools offering Gaelic-medium education. A further 34 secondary schools were also offering subjects through the medium of Gaelic (including Gaelic itself) (Bòrd na Gàidhlig, 2019).

The expansion of minority language use among young learners through immersion education, such as the case of Gaelic in Scotland, relies on the provision of equitable and inclusive services that can cater for children of all abilities. To achieve this goal, it is important that GME supports and strengthens the potential of pupils of different abilities, including pupils

with developmental language impairments. According to the MacLulich (2013: 29) audit on additional support needs (ASN) in GMPE, language or speech disorders represented 18% of the ASN school population. However, to date there are no tools to assess GMPE pupils' abilities in Gaelic grammar, beyond the level of basic vocabulary, phonology or reading (Lyon & MacQuarrie, 2014; MacQuarrie & Lyon, 2019). This can have a long-term impact on whether GME and GMPE are perceived as inclusive and competitive educational choices for children with compromised language abilities and their families.

3 Why MAIN is important for Scottish Gaelic and GME

In the context of Gaelic and GME and given the lack of standardised assessments or comprehensive developmental studies on the language, the adaptation of MAIN (Gagarina et al., 2012, 2015, 2019) to this minority language was deemed fruitful and desirable for a number of reasons.

First, narratives have long been used as an ecologically valid assessment tool to gauge language development in children of different language backgrounds (monolingual, bi-/multilingual) and ability (typically development, language impaired) (Gagarina et al., 2015). Second, narratives offer a comprehensive overview of the child's ability both at the level of grammar, e.g. morphosyntax, syntactic complexity, lexical diversity, what is commonly referred to as *microstructure*, as well as at the higher level of discourse organisation and structure, more commonly named *macrostructure*.

In terms of MAIN specifically, there are various advantages for using this tool in the GME context over other existing narratives. First, the tool allows us to collect semi-naturalistic data in a consistent way from a school population sample that ranges across different ages and school years. Given the lack of (standardised) assessments for Gaelic that go beyond the phonological or lexical level, MAIN offers a naturalistic way of capturing language development more globally. Second, its rigorous design and method allow for a systematic and methodologically sound way of assessing both macrostructure and microstructure offering thus a comprehensive picture of the child's linguistic and communication skills. In addition to this, given the crosslinguistic nature of the COST Action within which it was developed (Armon-Lotem, de Jong, & Meir, 2015), the tool is available across both languages of the bilingual children, in this case English and Gaelic. This allows us to test narrative skills at the level of macro- and micro-structure across both languages of the bilingual individual and to capture developmental trends across both languages. Finally, given the potential for clinical diagnosis of narratives, MAIN constitutes a child-friendly and ecological way of gathering language data from vulnerable populations, such as children with DLD in a language, for which no such data currently exists.

All-in-all, MAIN has the potential of filling an important gap in our current knowledge about the development of Gaelic in GME. As such, it could inform researchers and educators regarding the development of Gaelic as well as the areas of Gaelic that are problematic for children with developmental language disorders.

4 Properties of Scottish Gaelic

Scottish Gaelic belongs to the Celtic family of the Indo-European languages. It is an inflectionally rich language with morphologically intricate verbal and nominal paradigms. Gaelic shares a number of morphosyntactic properties found in other Celtic languages, e.g. Welsh. Nouns mark a two-way gender system (masculine, feminine), and definite articles are marked for gender, number and case. Verbal paradigms carry both inflectional and suppletive morphology with distinctive inflections for all persons and numbers. Furthermore, tense formation is facilitated by the present of auxiliaries giving rise to both periphrastic and concatenating tense forms. Gaelic also has postnominal modification and feminine nouns give rise to consonant initial mutation, e.g. *gille beag* ‘lit. boy small’ for ‘small boy’, as opposed to *nighean bheag* ‘lit. girl small’ for ‘small girl’ with mutation on the feminine adjective. Gaelic has a VSO word order, which means that the inflected verb, be it an auxiliary or a lexical verb, is placed before the subject and the object. The richer inflection on nouns and verbs gives rise to inflectionally richer information at the level of microstructure compared to the English narratives, and this was reflected in the Gaelic adaptation of the MAIN. The inflectionally richer character of Gaelic compared to English has the potential of unravelling whether or not Gaelic-English bilingual children with DLD will make more such errors in Gaelic as opposed to English at the level of morphology, as well as whether word order differences, e.g. VSO in Gaelic vs. SVO in English, impact on the rate and trajectory of acquisition of the two languages within the same individual.

5 Adapting MAIN to Scottish Gaelic

The Gaelic version of MAIN was developed as part of a Bòrd na Gàidhlig - (Gaelic Language Board) funded project (2017-18) aiming at (i) capturing language development in Gaelic and English across different domains (vocabulary, morphosyntax, narratives) in children attending GMPE, and (ii) identifying areas of difficulty in Gaelic in children with DLD in this immersion education. MAIN was adapted into Gaelic from the English version following the very clear and detailed instructions and guidelines provided in Gagarina et al., 2012 and 2015, and by taking the specific properties of Gaelic into consideration. One of the main challenges with adapting MAIN to a minority language surrounded the lack of (standardised) terminology in Gaelic that would be directly comparable at the level of register or frequency of use to English. For example, even the word ‘narrative’ is not as commonly used in Gaelic as it is in English. In Gaelic, the words *sgeulachd* ‘story’ or *naidheachd* ‘news’ may be more comparable in terms of frequency of use. However, narratives are more than just news or a story, so finding an appropriate term was a challenge. In the end, we opted for the term *dòigh-aithris/modh-aithris* ‘method/way/form of reporting/telling.’ Making sure that appropriate and transparent terms were chosen in the instructions and scoring sheets posed similar challenges. Finding a way of phrasing more technical vocabulary in a way that could be easily understood was quite difficult and required discussions with speakers of the community to make sure that the adopted

terminology would not be opaque. For example, the phrase “Internal State Terms” (ISTs) cannot be straightforwardly translated to Gaelic in the way it works for English. Although, a way was found, it was actually easier to give a translation for the types of ISTs (e.g. perceptual, physiological, emotion, mental verbs etc.) than finding an overarching term. To ensure the clarity of the terminology used in the manual, the instructions and scoring sheets, various decisions were discussed with Gaelic-speaking scholars and practitioners and were also proofread by a professional Gaelic-speaking proofreader.

6 First phase of the project on supporting children in GME

MAIN was administered as part of a wider battery of COST Action IS0804 tasks developed for Gaelic within the context of a larger project entitled *Supporting children with typical development and Developmental Language Disorder in Gaelic-medium primary education*. This project was funded by Bòrd na Gàidhlig (project number: 1718/29), the Gaelic Language Board, whose role is to promote the learning and use of Gaelic in schools and the wider community across Scotland. The first phase of the project was conducted from September 2017 to August 2018 and aimed at investigating the language abilities in Gaelic and in English of primary school children with and without language impairment in GME. Testing took place between February and June 2018. At the time of testing, children aged between six and eight years of age attending Primary 2 and Primary 3 were chosen for the study to ensure that all children who participated in the study had a minimum of a year and a half of exposure to Gaelic. The tasks were piloted in four schools which offer GME. Three schools were stand-alone Gaelic schools, and one was a school where Gaelic Immersion is available alongside English education. Three schools were in urban settings and one in a rural setting. Permission was first sought to contact the schools via each Local Authority, then headteachers were contacted. Headteachers were provided with, and asked to distribute, parental permission forms to Primary 2 and Primary 3 classes prior to the researchers arriving in the school.

A total of 56 children participated in the study (mean age: 7;2, range: 62–98 months). To ascertain whether or not any of the children had suspected DLD, we used the Clinical Evaluation of Language Fundamentals screener (Semel & Wiig, 2017), which is one of the standardised tools used widely in the UK to identify children with language impairment. We also collected information about parental and teacher concerns on language development and familial history of language impairment. An extensive parental questionnaire (Tuller, 2015) was also used to gather information about children’s exposure to Gaelic and English. Using these tools, five children from the sample were suspected of having DLD. In terms of exposure to Gaelic, all children in the sample were exposed to English from birth, but their exposure to Gaelic varied. Twenty-four children were exposed to Gaelic before their third birthday, with the remaining children being exposed to Gaelic after that age, predominantly in a school setting, with large variation in age of onset and frequency of exposure to Gaelic outside the school setting.

Testing took place in a quiet area of the children's schools. All children completed a retell (Cat/Dog) and a telling task (Baby Birds/Baby Goats) in both Gaelic and English. Counterbalancing was ensured across languages. A minimum of a week was given in-between testing the different languages. The retell story scripts were recorded, and the recordings were added to PowerPoint files, along with the corresponding story-pictures, similarly to the English version. For the retelling tasks, the children were presented with the pre-prepared PowerPoint and they listened to the stories using headphones. They were then prompted to tell the researcher the story and the comprehension questions were asked. For the telling tasks, children were presented with three envelopes containing the same picture-based story and were asked to choose one. After looking at the pictures, they were prompted to tell the researcher the story. Once finished, the comprehension questions were asked. All stories were recorded using the Audacity audio software. Stories were later transcribed and scored. In each session, the language being tested (Gaelic/English) was used from the start of the experimental session. Overall, children engaged with the task well. Some of the younger children, however, opted to retell/tell the stories in English, despite being told the session was to be in Gaelic, the researcher speaking only Gaelic and the comprehension questions being delivered in Gaelic. This could possibly be due to their limited length of exposure to Gaelic when tested.

6.1 Analysis and preliminary results

At the time of writing this report, all Gaelic and English narratives had been transcribed following the MAIN protocol. The Gaelic narratives have also been scored, whereas the English narratives are in the process of being scored. To ensure the validity of transcription and scoring, a subset of the Gaelic and English data (approximately 10%) will also be checked by a Gaelic-English bilingual speaker.

Preliminary results from the narrative macrostructure in Gaelic for the typically developing children demonstrate a wide range of abilities, with children obtaining scores on the Total Story Structure (TSS) between 2 and 12 points (average: 8 out of 17 points overall). A wide range of abilities was also observed in the comprehension questions, although, overall, children had high accuracy on these (mean: 6.9, range: 1–9 out of 9 points in total) compared to the TTS. Responses to the comprehension questions were taken as correct even when children responded to them in English.

7 Conclusions and future directions

This short paper described the rationale for the adaptation of MAIN to Scottish Gaelic and presented some preliminary descriptive results on macrostructure from the first phase of testing of six- to eight-year-old children attending Primary 2 and Primary 3 in Gaelic-medium education. The adaptation of the tool to a minority language highlighted the challenges that come with the lack of standardisation or the difference in the context of use of certain minority language words, an issue not really encountered in English. Given that the majority of children

included in this report came from non-Gaelic-speaking homes, preliminary results showed a wide range of ability in Gaelic at the level of macrostructure. There are two next steps in this process. The first step involves analysing existing data further, including the microstructure properties, and understanding how child-level background variables (e.g. age and degree of exposure to Gaelic) influence narrative abilities in this language. The second step entails the comparison of the children with DLD to those with typical development to better understand how Gaelic-speaking children with DLD perform on this task and which aspects of the Gaelic adaptation may be challenging for this group. Since the project has also been given further funding by Bòrd na Gàidhlig to continue into a second phase in 2020-21, we are hopeful that, by collecting data from a larger school population that includes a wider age range of children with typical development and DLD in GMPE, we will be able to collate a more comprehensive picture of language development and language impairment in Gaelic-speaking children attending this type of immersion education in Scotland.

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