

Digital Developments in Scottish Studies

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in conversation with VIRGINIA BLANKENHORN

Technology wasn't always a big part of Scottish Studies. For those whose scholarly training in our field involved the hands-on study of old manuscripts, or the transcription of voices from magnetic tapes, the steepest technological challenge may have been changing the ribbon in an electric typewriter or the battery in a tape recorder. The past few decades have been transformative. But while the pace of change is – and no doubt will remain – challenging, a variety of new technologies will increasingly shape how we gain access to source materials and the questions we ask about them. Greater understanding of these technologies will be essential for all of us.

To trace the impact that digital technologies have already had on our field and to get a sense of what lies ahead, *Scottish Studies* spoke with three colleagues involved in transforming access to specific areas of study. Our first interview was with Professor William Lamb of the University of Edinburgh's Department of Celtic and Scottish Studies, who has been involved in several pioneering, computer-based projects designed to facilitate access to source materials in ways that will allow us to ask questions we might not have otherwise imagined. The latest of these is a collaborative project entitled '[Decoding hidden heritages in Gaelic traditional narrative with text mining and phylogenetics](#)':¹



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Decoding Hidden Heritages in Gaelic Traditional Narrative with Text-Mining and Phylogenetics

Before we delve into what your project is about, could you remind us what 'digital humanities' is?

Well, recently there's another term that I like a little bit better and that's 'computational humanities'; but I'll come back to that in a minute. 'Digital humanities' is a buzzword, and it means different things to different people. Somebody has remarked that, really, the way that people work in the humanities today, *everything* is 'digital humanities', or will be soon enough, and that anybody who sits in front of their computer and does humanities work is in the 'digital humanities'. It's at that point that I think the term becomes meaningless. What it *should* mean, I think, is any form of research pursuit in the humanities that is 'digitally driven' – facilitated by computers – or that relies on 'digital artifacts'. This would mean that the research could only be done through computing, or that it would rely upon something that's only available using a computer, say, a dataset of some kind.

So, if I'm sitting at my computer reading from PDF files of documents that were originally in print, is that not 'digital humanities'?

¹ <https://gtr.ukri.org/projects?ref=AH%2FW001934%2F1>

Maybe a better example would be if you use your computer to access [Tobar an Dualchais](http://www.tobarandualchais.org/)² – then you’re probably doing ‘digital humanities’, which, to me, means either using techniques that are digitally driven, or accessing databases that are on the Internet or in some digital form. If you look at a medieval manuscript in a PDF online, some people might argue that that’s doing ‘digital humanities’. But if you’re just looking at something that happens to be online, I certainly wouldn’t call that ‘computational humanities’ because you could get the same information by going to the library and looking at the original resource. On the other hand, ‘computational humanities’ implies the existence of material that has been developed by using a computer, and that you can only make use of by using a computer.

If you’re thinking about this from the point of view of scholarship in, say, Celtic Studies, try to imagine that you’re doing something that you wouldn’t be able to do if you just had an archive or material objects. Let’s say you’re a medieval scholar, and you want to take a look at the prevalence of certain terms in manuscripts over a certain date-range; or maybe you want to look into how particular words change their meaning – what we call ‘semantic drift’ – in medieval Irish. If there were a database of the relevant documents – if a program had been developed to recognise and read the handwriting in those manuscripts and translate them into a form that you could manipulate and play with using the computer – you could then conduct your research by building a model on your computer. You could even do it manually, just kind of plugging-in some search terms, or automating some search terms. That would be an example of something a little bit more specialised, more digitally driven. You’re doing something differently because you’re using information that’s been digitized, and you’re using a computer to manipulate the digitized data to serve your research needs.

Do you think the availability of online datasets will come to drive the questions that researchers ask? I guess my concern is I would rather have an idea and then discover a digital tool that will help me, than have the digital tool suggest the idea to me in the first place.

I see what you’re saying, but I don’t think they’re mutually exclusive. Computer technology certainly opens up possibilities that weren’t even imaginable before, outside of science fiction. Sometimes if I’m working on a project – maybe increasingly now that I’m doing coding and things like that – a little bit of code may suggest something interesting to look at, because the technology will enable me to do so; but that’s not to say that it’s a good way of doing things. Maybe you’re kind of just rolling the dice, like the proverbial monkey with a typewriter.

Right now, the humanities are under pressure in ways they weren’t for a long time, and the existence of technology is reshaping how we think about everything. What worries me is students’ assuming their research has to have a computer science angle because that’s what’s going to get funding now, or that’s what’s going to get them a career later. Is this the case? This is still humanities, isn’t it?

Absolutely. I guess it depends on the scale of what you want to do, in part, and there is room for a certain degree of pragmatism. I certainly discovered in my career that, by about 2014, it was pretty obvious that if I wanted to get the size of grants that I knew were out there, it was going to have to be something that would raise eyebrows, something that people weren’t already doing with Gaelic and with ethnology. You certainly can get small pots of money if you’re doing really interesting humanities projects, but it’s a lot more difficult I think to get a major grant doing things that are paper-based, or things that don’t seem to be ‘cutting edge’.

Your latest project, ‘Decoding hidden heritages in Gaelic traditional narrative with text mining and phylogenetics’, has been awarded a big grant from the UK’s Arts and Humanities Research Council. What’s it about, and why do you think it got funded?

² <http://www.tobarandualchais.org/>

I think they liked the international elements, for one thing. In addition to AHRC funds we're also receiving support from the Irish Research Council, and we're working with scholars from Scotland, Ireland, England and the United States. We've got a range of people, from early-career researchers to more senior academics who already have a track record in this sort of stuff. For instance, Professor Jamie Tehrani at the University of Durham had already done some really interesting work with phylogenetics – really proper computational humanities work that looks at deep-dating of international folk tales. This takes the ambition of the Finnish school – the 'historic-geographic' method – and kind of drags it into the 21st century. Meanwhile, I myself have been interested in artificial intelligence, how machine learning and text mining allow us to accumulate and then investigate massive corpora.

For this project, we're focusing on the material collected by the Irish Folklore Commission from the 1940s – now held by the [National Folklore Collection](#)³ in Dublin – and the material held in the School of Scottish Studies Archives – specifically, the Tale Archive – here in Edinburgh, which dates from the 1950s. We want to find out what a large, digital collection of traditional narrative might tell us about historical cultural exchanges between Scotland and Ireland. By looking at the deep history of folk tales and storytelling in both countries, by investigating the internal structure of this particular corpus, we hope to better understand not only the structure and the detail of particular tales, but also the cultural and geographical connections between Gaelic Scotland and Gaelic Ireland, and the early communications networks that made those connections possible.

Can you give us a concrete example of what you mean?

Well, using different computational techniques we can look at a particular folk tale – one of the International Tale types that's widely spread in Scotland and Ireland, like 'the dragon Slayer' (ATU 300) or 'Red Riding Hood' (ATU 333). Of course it's not called 'Red Riding Hood' in Irish; but we could take a tale like that and we can build up a set of metadata – such as the actual tale motifs that appear in the story, or the gender, age or occupation of the storyteller from whom it was collected – and then make comparisons between versions of the story told in Gaelic Scotland and Ireland to see what features appear in tales from both areas.

So, you're not just comparing the internal data available from the tale text, but you're gathering demographic data about the people who told it?

Those are some of the types of questions that we're looking at, the demographic and historical and motif-driven relationships between things. If we look at textual relationships, we can do thematic analysis, so instead of looking at folk tales as belonging to particular tale types, we can look at the whole corpus. For instance, we could see how many different tales involve a certain type of character – a wolf, say – and what are the characteristics of those tales.

As regards demographics, we might look at the difference between tales that women told in Ireland versus the tales that men told. Were some tales told only by people of one gender, and not the other? What associations might there be between the vocabulary used by a storyteller and the gender or even the repertoire of the storyteller? We can then take what we find out about Irish storytellers and compare it to the Scottish Gaelic corpus, to see if the same distinctions apply to Scottish storytellers.

So if a woman were to tell a hero tale – I'm thinking of the daughter who really likes her father's hero tales and wants to tell one herself. In a conservative society like that of Gaelic Scotland, would she tell it the way her father told it, or would she tell it 'like a woman' – whatever that might mean?

This is a really interesting question; it's just the kind of thing that we're trying to determine. It's not just 'what tales did women tell?' as opposed to 'what tales did men tell?', but what sort of language

³ <https://www.duchas.ie/en/info/cbe>

did women or men use when they told the tales. We'll never be able to reach the end of these kinds of inquiries, but we're hoping that eventually we'll have a search engine that will allow people to look into questions like these, and we're doing some of this research ourselves.

What about material collected from elderly women who learned stories from long-deceased male family members, but who might never have told them themselves until the researcher turned up?

That's a good and fair point. I think it's probably a case of being careful with interpretation.

Going back to what I think the AHRC and Irish Research Council were interested in, there a lot of things that we're doing that will outlive this project. First of all, there will be this large corpus of text. All that metadata will be out there in public view forever, potentially, and accessible from various points. In addition – and this is fairly 'cutting edge' – we're working with language technology, building models for handwriting recognition both in Ireland and Scotland so we can go through all of these manuscripts semi-automatically, and then digitally tag the output so that it can be easily searched and analysed. We're focusing on traditional narrative at the minute, but we're developing techniques for handwriting recognition that could be applied to any other sort of text, such as songs, for example.

So assuming that you're able to implement a viable technological process for handwriting analysis for Irish and Scottish Gaelic, will it be robust enough to stand the test of time, or will it need constant updating as the technology becomes more sophisticated?

That's a really good question. I think the technology is mature enough at this point that the basic techniques will be the same. We're using a platform called [Transkribus](#)⁴ which makes this type of work much more user friendly than if you're just entering code on your computer. But the question goes beyond that. We don't know, for example, what is going to happen with general user interfaces like Google. How will humans in the future interact with computers? That is an unknown quantity, and the landscape is constantly changing.

Returning to your grant application, do you think your funders may have envisaged your project having wider applicability beyond Scottish Gaelic and Irish – that it might be a good model for similar projects in other languages?

The AHRC and IRC understand that the project they're funding involves Irish and Gaelic, and I don't think they were looking beyond that. Obviously, the Irish Research Council is interested in our project because of the Irish language content. But who is to say what the priorities are going to be in the years to come? I do think the computational humanities will be increasingly important, and I think computer literacy in all different ways is going to be increasingly important. Machine learning and artificial intelligence are going to play a greater part in what we all do – there's no doubt about that. So, I think it's important for people to begin to educate themselves about these large language models like GPT-4, so that we understand what they can do and what they can't do, and what methodological and ethical problems might arise when we start to incorporate such models in our work. In this project, for example, ethical considerations will be a factor, because people who sat in their living rooms talking to researchers sixty or seventy years ago could never have imagined their names being in an online database. So we have to be careful if – and how – we use their names, and we have to be aware of any sensitivities in the material they gave us at the time.

But as regards other languages and linguistics projects, there's certainly a lot going on. I'm currently involved in five or six different research projects (a little crazy). There's a project we want to do based on the Gaelic material collected for the [Linguistic Survey of Scotland](#)⁵ in the 1950s and

⁴ <https://readcoop.eu/transkribus/>

⁵ <https://www.ed.ac.uk/information-services/library-museum-gallery/cultural-heritage-collections/school-scottish-studies-archives/manuscripts-collections/linguistic-survey>

1960s, all of which has been catalogued now thanks to a grant we got from [Faclair na Gàidhlig](#).⁶ There's a lot of work that we can do now with that material that we couldn't do before. Another project, which the Scottish Government just agreed to fund, deals with Gaelic speech recognition. We're aiming to develop automatic Gaelic subtitling for the BBC. At the moment, programmes in Gaelic are subtitled in English, but it doesn't work the other way around. As regards education, we would like to be able to help kids in Gaelic-medium schooling who may have learning difficulties and cannot write very well, to give them the same speech-recognition 'scaffolding' that's available for pupils in mainstream English-medium schools.

And then the third thing – and this is really my passion – would be to improve the search experience on audio-based websites like Tobar an Dualchais. Say you're interested in a formulaic expression – a word, or a phrase, or even a concept – and you can't get at it using the current search engine. Let's say you're interested in witches, but there's no way, for example, that you'd be able to find every single record that mentions the word *bana-bhuidseach* ('witch'). With speech recognition, we could just set the algorithm, the routine, and let it run through all the Gaelic language recordings on Tobar an Dualchais, and have it transcribe them – probably somewhat roughly in some cases and better in others – and then index everything using those transcriptions. Once we do that, we'll be able to find all sorts of proverbial needles in haystacks. We've got tons of transcriptions of many speakers already, so theoretically we could train machine learning models to understand those speakers and be able to transcribe the rest. Some people are hard to understand, particularly if you're not in the room with them. I've been learning Gaelic for thirty years but there are still speakers that I struggle with, so if we could train a speech recognition model to do even a pretty good job with these speakers, then we can use human intuition to fill in the gaps.

You told me that you were also talking with Gordon Wells about the work he's done with his project, [Island Voices](#).⁷ Some of his recordings are priceless – they are great for people who are trying to learn language and who have trouble accessing native speakers in a naturalistic environment. It was actually his material, in part, that allowed us to develop the first speech recognition model for good, colloquial, contemporary Gaelic, because so few recordings of contemporary speech had actually been transcribed in detail. We had material from the School of Scottish Studies Archives, but most of that was recorded decades ago, whereas Gordon's recordings and transcriptions actually provided the more modern register that we wanted. We were able to help him out, in turn, by providing subtitles for the videos he provided to us.

So overall you're talking about getting straightforward transcriptions of things that are currently hard to decipher – whether in manuscripts or in speech – and giving people a chance to connect with the spoken registers and the manuscript registers without having to study paleography or struggle with an audio recording that may be hard to hear...?

That's it. There is so much material to pull from and very few people working on it. Before I retire, I would love to help make these resources more accessible to people, because while Covid restrictions and other factors mean that it's increasingly difficult to visit the School of Scottish Archives in person, there is nevertheless a ton of material online – if we can make it more easily accessible.

One of the reasons that I think we've been successful with these grants is that we're trying to do several things at the same time. By developing projects based on material of ethnological or historical interest and adding an element of language technology we can accomplish various things. First, we can extract information not just about what people are saying but how they're saying it, what their speech reveals about their time, their age, their station in life, their location, their relationships with other speakers – so that provides a linguistically interesting corpus, as well as a culturally interesting one. But in addition to that, we're building large databases that we can search, that we can use as

⁶ <http://www.faclair.ac.uk/>

⁷ <https://guthan.wordpress.com/about/>. Our interview with Gordon Wells begins on page 76 below.

training data for speech recognition, or large language models, or predictive text, or grammar correction – things that we’re starting to take for granted in English, but which need to be invented for Gaelic. The people who recorded their stories and songs, and the researchers from the School of Scottish Studies who visited them – they couldn’t have imagined how their contributions would one day be used, enriching all kinds of lived experience.

Finally, maybe we need to talk about stability and security. What happens when you’ve come to depend upon a certain online resource and it suddenly changes or disappears altogether?

Yeah, this is one of the problems. If you have a regular book, you can pull it off the shelf and it’s never going to change. But the problem with online databases, websites, et cetera is that the code that underlies them can go out-of-date or potentially become compromised. As I understand it, one database of ours here at the University of Edinburgh, the [Carmichael Watson Project](#),⁸ had to be taken down because the underlying code had security flaws that got worse over time, and the university couldn’t risk keeping it online. Now the problem is that bringing it back would probably require as big a grant as the one they got to do the project in the first place.

More recently I think people have become aware that longevity – maybe ‘redundancy’ or ‘duplication’ are better words – needs to be built into these systems so that if one part fails the whole thing doesn’t have to go down. In other words, the datasets need to be independent of the ‘front end’ – the user interface, the website – so that even if a problem develops with a given website, the database itself isn’t lost, but can still be accessed elsewhere. As long as we ensure that the data is archived properly, it will have value independently of what may change at the front end.



Our next interview was with Harvard Associate Professor Natasha Sumner, and illustrates some of the research potential that digitisation of resources will unleash. The recently launched **Fionn Folklore Database** provides tools that will help researchers locate and study the vast quantity of folklore material relating to the hero Fionn mac Cumhaill, who is said to have defended Ireland and Scotland from foreign and supernatural threat during a legendary third-century Golden Age:

What convinced you that a resource like the Fionn Folklore Database was needed?

I think a lot of people in the Gaelic academic world, and probably also the broader public, would agree that Fionn mac Cumhaill is one of the most important heroes in the Gaelic corpus, if not *the*

⁸ <https://www.ed.ac.uk/information-services/library-museum-gallery/crc/research-resources/gaelic/carmichael-watson>

most important hero. As the database [landing page](#)⁹ says, stories and songs about Fionn and his warrior band (known as the Fianna in Ireland and *An Fhèinn* or *na Fiantaichean* in Gàidhlig) form the most prolific body of narrative in the Gaelic tradition, spanning 1,400 years of continuous literary and oral transmission. In the oral tradition alone, I've identified more than 3,500 stories and songs about them since the beginning of folklore collecting in the eighteenth century. So, Fionn is important to an understanding of the Gaelic world. The collected body of folklore about Fionn and his men is significant and *should* be important to our discipline.

Unfortunately, not a lot of research has been done on the Fionn (or Fenian) oral corpus, despite how important it is, and there's a very good reason for that. Until now, much of the material has been almost hopelessly inaccessible. The first problem is one of physical accessibility: the tales are scattered across numerous archives throughout Ireland, Scotland, the Isle of Mann, England, Canada, and the United States. It takes a lot of time and effort to visit all of those archives to locate Fionn tales and lays, and I say that from personal experience! Of course, the relatively recent creation of digital repositories like [Tobar an Dualchais](#) and [Dúchas.ie](#) alleviates some of the difficulty of access, but not all archives are digitized, and none of the relevant archives has yet digitized their entire collection, so the geographical dispersal of the Fionn corpus remains an issue.

The second problem is the accessibility of the tales *within* the archives. It can be pretty hard to locate the Fionn tales you're looking for with the finding aids available in the archives, or using their digital resources.

Is that a failure of the archives, or is there a bigger problem here?

It's absolutely not a failure of the archives. I don't want to malign any of the hard-working archivists of these collections! No, the happenstance cataloguing of Fionn folklore across archives has everything to do with the nature of the material. Because we're dealing with a native heroic tradition, there isn't a lot of overlap with the international cataloguing systems that most archives use, like the Aarne-Thompson index of international folklore, or the various national migratory legend indices. There have been some efforts to organize the Fionn corpus categorically before. I'm thinking in particular of Alan Bruford's *Gaelic Folk-Tales and Mediaeval Romances*,¹⁰ but there are also other limited Fenian tale lists, like the one in the folklore collecting handbook prepared for the Irish Folklore Commission by Seán Ó Súilleabháin,¹¹ and Mícheál Briody also did a lot of work with Irish Fenian and hero tales in the 1980s. But there has not historically been a universally agreed-upon typology, so archival documentation of Fionn tales can be quite happenstance. A cataloguer may have reliably recorded several instances of a very popular tale, but for many of the others the only thing noted on an index card might be 'Fenian' or a character's name: 'Diarmaid', for instance. With a corpus this large, that kind of documentation – while appreciated because, as I said, there was no agreed-upon typology for this stuff and archivists were doing their best – that sort of documentation is a real stumbling block. It's simply not conducive to scholarly investigation at the pace university administrations expect us to produce research these days. It's entirely understandable that only a few persistent scholars have ventured into the field of Fenian folklore.

So how are you addressing these problems?

The Fionn Folklore Database⁹ is the solution that allows researchers to work with Fenian folklore. In response to the geographical problem, it functions as a union catalogue, bringing together records from all of the different archives in a single, searchable database. And addressing the cataloguing problem, it provides the first ever comprehensive categorization of Fenian folklore, providing a

⁹ See image above; <https://fionnfolklore.org/#/>

¹⁰ Alan Bruford, *Gaelic Folk-Tales and Mediaeval Romances* (Dublin: The Folklore of Ireland Society, 1969).

¹¹ Seán Ó Súilleabháin, *A Handbook of Irish Folklore* (Dublin: An Cumann le Béaloideas Éireann, 1942).

uniform categorical system across all archives, which enables the sort of broad comparative analysis that is critical to the study of folklore.

That sounds great, but it must have taken some work to make it all happen. How did the project get off the ground? Were there any bumps in the road?

There's no such thing as a completely smooth road, but I'm very thankful to my sponsors (Harvard University and the Government of Ireland's Emigrant Support Programme) for making it as bump-free as possible.

The project officially got its start in 2019 when I got funding to hire the first research assistant, but I've been working on it for much longer than that. The basis for the database is a catalogue of Fenian folklore that I began to compile a little over a decade ago, which eventually became an appendix to my doctoral dissertation. I began compiling a catalogue because I wanted to research female tellers of Fenian folklore, but I found that I couldn't do so properly without being able to define the limits of the corpus. So that's what started me on my journey to document Fenian folklore.

I've already mentioned some of the previous work, and I discuss the process of cataloguing in an [essay](#) published on the database website.¹² That initial work was decidedly not digital – and really, much of the back work for many current digital humanities projects probably looks a lot more like traditional humanities than one might assume. After trawling through every tale list and card catalogue I could get my hands on, I went to the recordings and the manuscripts and I verified all of my source data, re-catalogued when necessary, documented additional metadata for each tale, and catalogued a ton of previously undocumented Fenian folktales. All of this took many months of more than full time work.

Maybe one day AI will be able to do some of those tasks using speech and handwriting recognition to transcribe the tales (the ones that are digitally available), and then cross-referencing with typological documentation to automatically catalogue and record metadata. But in this context, it required a lot of skilled labour to compile the data set for the Fionn Folklore Database. And even in a future AI context, a lot of human verification might still be needed without concurrent advances in linguistic and topographical scholarship. Given non-standardized spellings, dialectal vocabulary (in more than one language), and local place names that are irregularly documented in scholarship, some aspects of data collection and regularization may remain specialized human skills. By way of example, the geodata (latitude and longitude) for every place in the Fionn Folklore Database had to be recorded by hand by research assistants because, despite urging from our developer, that process couldn't be automated for all of the reasons I just gave.

If so much had to be done in a 'traditional' humanities way, why embark on a digital project at all? Why not just publish a folklore catalogue?

That question gets right to the heart of the matter. In fact, I had 'traditional' resources in mind even as I conceptualized the database. The Fenian tale type descriptions in the database approximate the structure of an international tale type description in the ATU index, as you can see in *Fig. 1*.¹³

I chose to go with a database rather than a more traditional reference book for a couple reasons. First, an online database is much more malleable than a printed book; you can update its content a lot more easily. I think that's important when you're dealing with a typology. All typological systems are man-made, imposed, and fallible; there's no such thing as a perfect one. The Aarne-Thompson index has been thoroughly revised a couple times – it's now the Aarne-Thompson-Uther index – and aspects of its categorization are still subject to query. Revisions to the Fionn Folklore Database are also likely in the future. But unlike the ATU index, we'll be able to make those changes right away; we won't have to wait for another print run.

¹² <https://fionnfolklore.org/#/creating-the-catalogue>

¹³ Uther, Hans Jörg, Antti Aarne, and Stith Thompson, *The Types of International Folktales: A Classification and Bibliography*, 3 vols (Helsinki: Suomalainen Tiedeakatemia, 2004).

The ability to create reliable, user-friendly online databases is really a game-changer for this kind of research. It may be more expensive to create and maintain, but when scholarly thinking changes, you don't need to wait years or even decades to publish a revised edition of a print catalogue; you can make the updates in real time. That's valuable.

The screenshot shows the Fionn Folklore Database website. The header features the logo 'F', the title 'Fionn Folklore Database', a language dropdown set to 'English', and a search bar with the placeholder 'Keywords'. The navigation menu includes links for HOME, STORIES AND SONGS, PLACES, PEOPLE, ARCHIVES, RESOURCES, and CONTACT. The main content area shows a breadcrumb trail: Home > Stories and Songs > The Death of Cumhall. The title of the entry is 'Bas Chumhail (The Death of Cumhall)'. Below the title, it lists 'Also known as' as 'Mar a Chaidh Cumhall a Mharbhadh (How Cumhall was Killed)' and 'Further Information' as 'Book of the Dean of Lismore no. 27'. A paragraph of text describes the lay as a dialogue between Fionn and Garradh, detailing the events leading to Cumhall's death. It also mentions that versions of this lay have been collected in Argyllshire and Perthshire. Below this, it lists 'Sources consulted: ID 542, 543' and a citation for Ross, Neil, *Heroic Verse from the Book of the Dean of Lismore* (Edinburgh: SGTS, 1939), 184-89. Finally, it states 'Titles associated with this story/song (2)'. Two record cards are displayed below, each with a title and ID number, and a list of metadata fields including Interviewee, Collector, Date, Archive, and Collection.

Mar a Chaidh Cuthal a Mharbhadh ID: 542

| | |
|-------------|-------------------------------|
| Interviewee | Archibald Fletcher |
| Collector | Archibald Fletcher |
| Date | 1750-01-01 - 1801-12-31 |
| Archive | National Library of Scotland |
| Collection | Archibald Fletcher Collection |

Bas Chuthail ID: 543

| | |
|-------------|--------------------------------------------------|
| Interviewee | unknown |
| Collector | Alastair Irbhinn |
| Date | 1801-01-01 - 1801-12-31 |
| Archive | Edinburgh University Library Special Collections |
| Collection | The Laing Collection |

Fig. 1. A Fenian tale type description (<https://fionnfolklore.org/#/lays/cml>)

Was the user experience also a concern?

Yes, absolutely. I'd say it was the primary reason I opted for a database over a print resource. A database is just a lot more *useful*. Users can perform a tailored search of a database and come up with

a list of results aligned with a specific research question. While a simple search is possible from the landing page, the search results page provides a faceted search tool that allows for multiple ways of isolating the material the user wants to work with. [A basic search for ‘Bran’](#), for instance, will take the user to a page where they can filter the records containing the name of Fionn’s hound according to criteria such as the language used, the form of the story (narrative or song), date and location of the recording, location of the archive(s) where the item is held, and whether or not the item has been digitised.¹⁴ From there, users can easily click through to a storyteller and discover other Fionn tales they’ve told, or to an archival collection to see how much more Fenian material is held there, or to other tellings of a tale by the same storyteller. For digitised material, links to external digital archives allow users direct access to available audio or manuscript records of an individual item (see *Fig. 3*).

So, discoverability is much, much easier with an online database. There’s also a whole slew of data visualization tools that developers can implement to help draw points of connection that may not be readily apparent in a more traditional resource. The one we’ve incorporated is a dynamic digital map that shows up when viewing individual records and displays storyteller and collector locations specific to that record.

The screenshot shows the Fionn Folklore Database interface. At the top is a navigation bar with the site logo, the title 'Fionn Folklore Database', a language dropdown set to 'English', and a search bar labeled 'Keywords'. Below this is a secondary navigation bar with links for HOME, STORIES AND SONGS, PLACES, PEOPLE, ARCHIVES, RESOURCES, and CONTACT. The main content area features the title 'Los Lurgann is Fionn; An t-ainm aig Fionn; An Fhéinn' and a prominent blue button labeled 'VIEW / LISTEN ONLINE'. To the left of the map is a metadata table:

| | |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Database ID | 2301 |
| Story/Song Type(s) Incorporated | Macghníomhartha Fhinn (Fionn's Boyhood Deeds) Seanchas - Scéal éagsúil (Seanchas - Miscellaneous) |
| Form | story, short + lore / seanchas |
| Archive | University of Edinburgh, School of Scottish Studies Archives |
| Collection | School of Scottish Studies Sound Archive |
| Recording Number(s) | SA1968.029.B9, B10, B11 |
| Recording Length | 00:04:22 |
| Collection Date | 1968 |
| Language(s) of original | Scottish Gaelic |

Below the table are two light blue boxes: 'Interviewee: Donald Sinclair' and 'Collector: John MacInnes', each with an eye icon. To the right of the metadata is a map of the British Isles with a blue location pin in the Scottish Highlands. The map includes labels for 'Alba / Scotland', 'Edinburgh', 'United Kingdom', 'Newcastle upon Tyne', 'Ireland', 'Dublin', 'Liverpool', 'Sheffield', 'England', 'Birmingham', 'London', 'Cymru / Wales', and 'Leeds'. The map is credited to 'Leaflet | © OpenStreetMap contributors'.

Fig. 3. Linked data on a tale page (<https://fionnfolklore.org/#/item/2301>)

¹⁴ <https://fionnfolklore.org/#/search/?keywords=Bran&page=1>

In Figure 3, for instance, we can see that the item was recorded in Tiree. But you can also go to the [places](#) page and see all of the locations in the database on a single map.¹⁵ That's a great way to see the density of material collected from different areas, and to locate Fionn folklore collected in a specific place. If you click a marker on the map, you can navigate to Fionn tales associated with people in that location.

I also felt strongly about making the user interface trilingual, so speakers of Irish and Scottish Gaelic wouldn't have to navigate a database of primarily Gaelic folklore through the medium of English if they didn't want to. This feature means that the database can potentially be used in Gaelic-medium classrooms. In fact, one of our objectives for 2023-24 is the creation of educational materials to accompany the website.

So, the same information that you might find in a reference book can be presented in a much more effective way in an online database – a way that will encourage more use, more exploration, and I hope more scholarship.

You mentioned earlier that the database was expensive to create, and it will also be expensive to maintain. Is there any chance that the resource could disappear in the future?

Yes, in comparison with a print resource, a database is expensive and labour intensive. I don't think anyone should take on a digital project without considering what level of effort is going to be required, and thinking through the long-term longevity of the project. There will be a lot of grant writing involved – some successful, some not – and at least some degree of ongoing oversight, although the amount will depend on the nature of the project. If the infrastructure is going to be complex – if it will need to be built from scratch, like the Fionn Folklore Database, to achieve the desired results – then there will be a lot of decisions to make in conversation with the developer, and the timeline may be fairly lengthy. It took over three years from the initiation of this project until the soft launch of the database in June 2022, and the data set – all of the metadata I compiled for thousands of Fenian folktales – already existed. So that time was all spent doing data preparation and going back and forth with the developer about aspects of the design. Granted, there was a global pandemic during that time that slowed the research assistant hiring process and impacted the speed of development, but it was still a lengthy and labour-intensive process.

There is also the ongoing cost of web hosting to consider, although that's comparatively quite low, and the cost and effort associated with periodic upgrades. Technological development moves fast, and when planning a digital project, it's necessary to consider the likelihood that your website will need upgrading every seven years or so to keep it from going obsolete – to keep the code from 'breaking'. Those upgrades likely won't be cheap.

So, a digital project like an online database requires ongoing funding and administrative oversight. Without those, the resource absolutely could disappear. I'm future-proofing the database as well as anyone can. I have no intention of giving up administration of it, and I'm optimistic that funding sources will be available down the road when serious upgrades are needed. As more and more new digital projects get underway, I think there will be increasing pressure to support their ongoing maintenance, and funders will likely respond to that need. But I'm also mindful that obsolescence is possible for any digital project. If the database is ever in that situation, the current plan is for the data to be archived in the [Harvard Dataverse](#).¹⁶ The present user interface is impermanent, but even if the website someday ceases to be maintained and upgraded, the data will remain accessible. And there's always the potential to publish a print resource down the road, if that's something people would want.

You said that you're currently creating educational materials to accompany the database. Are any other future developments planned?

¹⁵ <https://fionnfolklore.org/#/places>

¹⁶ <https://dataverse.harvard.edu/>

Yes, certainly! We've begun, in a limited capacity, to add storyteller biographies to the site. Domhnall Uilleam Stiùbhart composed two excellent biographies for us for [William Robertson](#) and [Sarah Fletcher](#). We hope to add more in the future. I also know of a large amount of Fenian *seanchas* that still needs to be catalogued and added. A research assistant began that process last year, and I'd like to hire someone to continue that work.

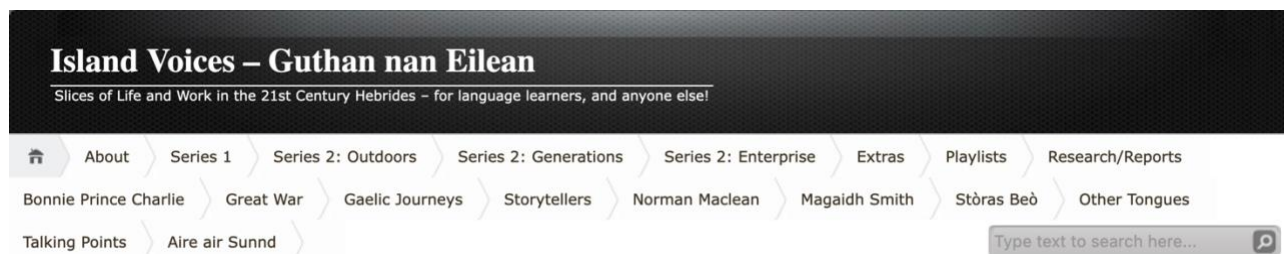
User interface improvements are also possible. We've held several workshops in universities, libraries, and other venues over the past year, and collected a lot of helpful feedback that will inform developments over the next few years. To some extent these will depend on what the developer thinks is possible, but they may include things like refining the faceted search capabilities so that users can isolate for even more data points, or creating additional visualizations like graphs or timelines.

People have also asked me whether we'd consider including literary sources – so shifting from a Fionn folklore database to just a Fionn database. Maybe that's something to consider in the distant future, but it would be a much, much bigger project. There are thousands of literary Fenian texts in manuscripts, many of which haven't been catalogued yet. I'd love to get to that point someday, but right now we're sticking with the folklore. It's severely understudied and there's a whole lot of it to explore.

That said, I've started hearing people reference the database at conferences, and it makes me really, really happy. I hope more and more people find it useful. I'll be keeping an eye on the Google Analytics and watching out for new Fenian folklore research inspired by the database.



Our final interview was with Gordon Wells, longtime director of the [Island Voices/Guthan nan Eilean project](#) launched at Sabhal Mòr Ostaig eighteen years ago.¹⁷ His work illustrates how a digital humanities project can not only facilitate scholarship, but also help to meet the practical challenges facing second-language learners and the communities they seek to understand.



How did the project come into being – and why?

Island Voices started in 2005 with funding from the European Commission's Leonardo da Vinci programme. It emerged from a collaborative project between Sabhal Mòr Ostaig and a number of European institutions interested in technology-assisted language teaching, particularly with reference to less-resourced languages. While the EFL [English as a Foreign Language] industry produces teaching resources in all sorts of media, this project was about making sure that the affordances available through technology were put into the hands of those teaching lesser-used and sometimes minoritized languages such as Basque, Danish, Romanian and, of course, Gaelic. There were probably eight or nine different languages represented.

Each partner in the consortium had to produce a set of exemplar materials, and because Sabhal Mòr Ostaig was the only UK partner we were charged with producing materials not only in Gaelic but also in English, establishing the bilingual approach from the very start. This suited my own agenda, because as someone based in the Western Isles it was clear to me that, while this is a Gaelic-speaking community, it's not a monolingual community. It seems to me that in any kind of language-teaching or language-planning enterprise you have to start from the ground up and understand the linguistic

¹⁷ <https://guthan.wordpress.com/>

environment in which you're operating; and yes, you might want to focus on just one of those languages, but you don't do that effectively by ignoring the existence of the other – you have to engage with the way these two languages coexist with each other at any given moment.

So, who was the project specifically designed for? Obviously, English speakers who want to learn Gaelic; were there others?

Of course. I mean, you can't produce sample materials for teaching English unless you've got a genuine audience for them. At the time this project was funded, a number of new countries – especially eastern European countries – were joining the EU, so there was a significant influx of people from Poland, Latvia, Romania and Bulgaria into Scotland, and the impact was noticeable. For a few years, between about 2005 and 2009, Russian was probably the third most spoken language in the Western Isles because it functioned as a lingua franca for all of those coming from eastern Europe, and these people provided a genuine clientele for the English language teaching materials we were developing. While the project was meant to illustrate a methodology for developing technology-based teaching materials, I also wanted to make it meaningful and useful in practical terms for people who were actually living here.

As regards the Gaelic-learning constituency, it was clear to me that while plenty of materials existed for beginners, there was a paucity of materials for post-beginners and especially for autonomous learners. While I believe some of our videos have been taken into language classrooms, I was more concerned with providing resources for individuals who weren't in a position to sign up for a graded class, but who might be living in a community setting where they needed to find their own resources.

Have you collected any data about how people have been accessing the site?

Oh yes. We're coming up to a half million hits on the [Island Voices YouTube](#) site; and something like 5,000 people have either signed up to email notifications from our [WordPress](#) site or followed us on Facebook or (what formerly called itself) Twitter.¹⁸ I can't really say who these people are or why they're interested, or whether they are using it in the way we originally anticipated; but people continue to use it in a variety of ways. Having said that, the real impact of Island Voices is hard to measure in concrete terms, because the philosophy behind the project has been to expose members of a community to a set of resources, and invite them to use those resources in whatever way empowers them. This means that the project may go off in all sorts of directions which can't be predicted beforehand, but which, when you look back, seem like natural developments.

Apart from learners of English and of Gaelic, what other user communities have you been able to identify since the project started?

In the [initial series](#),¹⁹ as well as in Series 2 ([Outdoors](#), [Generations](#), and [Enterprise](#)),²⁰ the focus was on the local community in the Western Isles, trying to expose post-beginners to authentic speech and situations by using short videos, produced by members of the community, to showcase local events and organisations. But because local people were involved in making these videos, and because the local flavour was injected from the very beginning, [this content](#)²¹ proved to be of interest not just to language learners but especially to members of the Western Isles communities themselves. That gave us a way of breaking out from just a language teaching orientation to something broader and hopefully reflective of the interests and needs of the local community right across the board.

¹⁸ <https://www.youtube.com/@IslandVoicesVideos> and <https://guthan.wordpress.com/about/>.

¹⁹ <https://guthan.wordpress.com/series-one/>

²⁰ <https://guthan.wordpress.com/series-two-outdoors/>; <https://guthan.wordpress.com/series-two-generations/>; and <https://guthan.wordpress.com/series-two-enterprise/>.

²¹ <https://guthan.wordpress.com/playlists/>

So local people are following the content of your videos about, say, furniture restoration and recycling, or tractor repair, or windsurfing in the Western Isles...?

Exactly. We know they're interested because they're talking about it and sharing it online. I published a [blog post](#)²² in 2020 that compared viewing figures after I'd shared a video with the 'South Uist Appreciation Society' group on Facebook, and then with some other Facebook groups for Gaelic learners all over the world. I mean no harm to Gaelic learners – I'm one myself – and there's an energy and an enthusiasm amongst Gaelic learners which is to be admired. Nevertheless, it was quite clear that when you post something on social media such as the 'South Uist Appreciation Society' or the 'North Uist Appreciation Society' the expression of interest is much, much greater. This isn't a scientific comparison, but even when you look at groups having roughly the same number of members, the uptake from local community groups in the Western Isles is always higher than from these rather more rarefied and scattered Gaelic-interest groups.

So, having started as a project designed for Gaelic learners and English learners, your project now has a third constituency in the local communities themselves?

It's been interesting to work through this process, exploring how new technology can be used in support of a language whose use is in decline – teaching that language, of course, but not necessarily restricted to teaching. We started with the short, narrated documentaries – the pretty pictures of Uist, and windsurfers and lazy beds – the scene-setters for the real thing, which was showing how people actually speak. Even in the first two programme series we included some interviews – in terms of recording a video it doesn't get much easier than plonking a camera down in front of somebody – and this gave us some wonderful material. Of course, it then needed to be transcribed, as transcriptions are also part of the package; but it became clear that there was tons and tons of stuff – particularly if you think about it not just in terms of serving the needs of people teaching and learning languages, but in terms of giving more of a voice to members of the community, representing them in ways that they might not have seen themselves represented. So it became clear that there was lots we could do to support that side of things.

For example, we've got a page on Island Voices which brings together all the recordings made as part of the [Bonnie Prince Charlie project](#)²³ developed by Stòras Uibhist, the South Uist Community landowner, in which people share their lore and their understanding about the Prince's time on the run in Uist and Benbecula. We've got a page on the [Great War](#),²⁴ led by Comann Eachdraidh Uibhist a Tuath [The North Uist Historical Society], who asked Island Voices to help with disseminating their recordings, many of which were made by people going out with an iPad and just recording their neighbours talking about their fathers or grandfathers or grandparents and their involvement from the outbreak of World War 1. Obviously I was very happy to facilitate those projects, and to encourage more people – individuals as well as community groups – to get in touch.

Probably the most eye-catching of the individuals who contacted us was [Norman Maclean](#),²⁵ whom we'd briefly recorded soon after he had returned to settle in Uist, so the relationship was already there. But then he came to us and said, 'I've got these stories which I need to get out there – so would you like to record them?' Of course! So we got Norman actually telling some of his own short, humorous [stories](#)²⁶ – you know the sort of thing he did.

²² <https://guthan.wordpress.com/2020/10/27/gaelic-virality-a-snapshot/>

²³ <https://guthan.wordpress.com/bonnie-prince-charlie/>

²⁴ <https://guthan.wordpress.com/the-great-war/>

²⁵ <https://www.scotsman.com/news/obituaries/obituary-norman-maclean-scholar-entertainer-and-gaelic-legend-2469432>. See also <https://guthan.wordpress.com/2017/09/18/dileab-thormoid-dhuinn/>.

²⁶ <https://guthan.wordpress.com/sgeulachdan-thormoid/>

After that it was a natural second step to record his life story (or bits of it) – [Saoghal Thormoid](#),²⁷ which we did just a couple of years before the end of his life. It was a highlight of my career, going in to sit with Norman Maclean for an hour a day for a week and just switching on the cameras and letting him go. The project was funded as part of some ethnographic research [Soillse](#)²⁸ wanted to do, recording the voices of community members who, probably since the War, would have witnessed extraordinary changes in the use and practice of Gaelic, making sure that their accounts of those changes were recorded in the language of the community. The Maclean recording project was, in a sense, a test drive, I just switched on the buttons and let him talk, so it's not the sort of polished broadcast standard you get on TV; but that's not necessarily a bad thing, and may actually bring people closer to the 'real thing', as it were.

So, you don't necessarily want something that looks like it could go straight onto mainstream BBC Alba – you want something where it's natural and where people feel comfortable?

Absolutely – and it's been a crucial part of the motivation. A primary tenet of linguistics, but one that seems to get forgotten a good bit, is the [primacy of speech](#).²⁹ This is such an obvious fact, but so often we think of language learning as the 'four skills' – listening, speaking, reading, writing – and if we're missing any of those we think we're inadequate in some way. But in fact, none of us writes before we speak, and if we didn't speak we wouldn't be able to write. It's only when we see people speaking naturally to each other, listening to each other, comprehending each other quite easily without any recourse to the written word, that we can get back to an understanding of what real language behaviour (apart from sign language) is.

Someone who can't read or write terribly well may even feel a sense of shame in some circumstances. Lots of Gaelic speakers – particularly older people – never became comfortable reading and writing Gaelic, because all their literacy training in school was in English, and all their reading and writing is in English. So if, for example, you're a Gaelic speaker and you're invited to submit an opinion in a consultation exercise, if that invitation comes in written Gaelic, then you know you're expected to reply in written Gaelic, and your response is likely to be 'No, thank you, I'm not going to touch it!' Even my mother, who studied Gaelic at university, when she wrote letters home it was always in English. For a long time it's been a linguistic feature of this community to be not just bilingual but also 'bimodal' – there was never any doubt that my mother would speak Gaelic within the family, but communication in writing was always in English.

It's ironic that nowadays, since the relatively recent advent of Gaelic-medium education, some members of the community feel that, because young people are now being taught to read and write Gaelic, everything is fine and the language is now on the right track. This is an example of what I call the 'privileging of literacy' – the notion that proper linguistic competence depends upon being able to read and write. But I think that, in terms of education, our focus on those skills ignores what's most valuable about Gaelic, which is the liveliness, the inventiveness, of the spoken language.

You told me earlier that the project is currently at an inflection point. What are your thoughts about the coming changes? Will it continue in the direction of language teaching, or community involvement, or both?

Possibly both. From my own point of view, as the years have gone by the interest in just being part of the community, encouraging participation and representing the community, has become a higher and higher priority. Having said that, I'm a trained language teacher, but I don't see the community

²⁷ <https://guthan.wordpress.com/sgeulachdan-thormoid/>

²⁸ <http://www.soillse.ac.uk/en/>

²⁹ Gordon Wells (2020). 'Reading Island Voices: Issues around the primacy of speech and the privileging of literacy, from a Hebridean viewpoint'. *Changing English*, 27:1, 109-117.

DOI: [10.1080/1358684X.2019.1660620](https://doi.org/10.1080/1358684X.2019.1660620). Also summarised at <https://guthan.wordpress.com/2020/05/18/studies-in-culture-and-education/>.

orientation as being detrimental, but rather as being an advantage from a language-teaching perspective. What language learners often need is the opportunity to put what they get in the classroom into practice, and it's often a big jump to go from the 'teacher talk' of the classroom to the way people actually do talk to each other in the community. So I think that, for learners, the focus on community involvement and representation in the videos we've produced can be a kind of bridge between those two language environments.

How do you think learners of Gaelic are, in fact, profiting from the tools you put at their disposal?

I've written a couple of papers about the whole learner/fluent speaker interface and how it's negotiated.³⁰ I think the most successful learners are the ones who actually start unlearning some of what they learned in the classroom – you know, they start saying 'weekend' instead of 'deireadh seachdain' and things like that. This then becomes a more genuine interaction, a sort of levelling of the playing field for people who, on the one hand, have been raised in a Hebridean home, and on the other hand, those who are interested in Gaelic, who have all sorts of ambitions and motivations for learning it, but who haven't grown up speaking it. There's an inevitable naiveté on the part of learners who aren't familiar with the community, and they can have expectations about the community's attitudes towards Gaelic which turn out to be unfounded once they hit the ground. Island Voices may give them a chance to warm up a bit, to see code-switching happening naturally, to hear Gaelic as it is really spoken rather than as read from a book. Then you know they'll be ready for some of the challenges of speaking Gaelic in real life. That's definitely part of the motivation. Because however well you've learned the written codes for Gaelic – and some people have learned it very well indeed – what the classroom experience of Gaelic brings you to is just the starting point – not the end point.

Finally, I'm thinking about some of the ethnographic and linguistic material you've developed. Is Island Voices proving a useful resource for researchers and collaborators? Is it giving people ideas for other projects?

Yes – to both of those. There's a '[Research/Reports](#)' page³¹ on the site that provides some project documentation, and provides access to a number of associated research projects dealing with topics we've talked about here. We also have a page detailing [our Gaelic-related contributions](#)³² to the [Aire air Sunnd \('Attention to Wellbeing'\)](#) project,³³ a collaboration between Comann Eachdraidh Uibhist a Tuath [The North Uist Historical Society] and a consortium of Scottish universities. And of course, the videos themselves constitute data sets that anybody can use.

It's also worth noting that – as you recall I mentioned that the project with Norman Maclean was meant as a sort of 'test drive'; the interview model we trialled in his case has now been followed up by Stòras Beo nan Gàidheal and the Language Sciences Institute of the University of the Highlands and Islands, who have produced some fifty [video interviews](#)³⁴ with Gaelic speakers from throughout the Western Isles. Many of these interviews are also accessible through the [Island Voices](#)³⁵ website, where they're accompanied by full Gaelic transcriptions linked to *Am Faclair Beag*, allowing users to follow at their own pace and look up unfamiliar words as they go (see *Fig. 4*). The user-friendliness is very important, and has made learning far easier than it was for earlier generations.

³⁰ Gordon Wells (2011), 'Perceptions of Gaelic Learning and Use in a Bilingual Island Community: an Exploratory Study' Sleat: Soillse; and (2013), 'Gaelic Digital Literacies in a Bilingual Community: a Sampling of Practices and Preferences'. Sleat: Soillse. Both available at:

<https://guthan.wordpress.com/research/>

³¹ <https://guthan.wordpress.com/research/>

³² <https://guthan.wordpress.com/aire-air-sunnd/>

³³ <http://ceut.northernheritage.org/wellbeing/>

³⁴ https://www.youtube.com/playlist?list=PL0ku8VJ3RjvLcYwbr_0s6qYZiySRDH_Ol

³⁵ <https://guthan.wordpress.com/storas-beo/>

Fig. 4 Transcriptions allow listeners to follow along and look up unfamiliar words as they go.

Another way in which the project is making an impact is in the area of what I call ‘internationalisation’ or ‘multilingualisation’. Our ‘[Other Tongues](#)’³⁶ page shows how some of our video documentaries – basically just picture sequences with a recording stitched on top that were originally narrated in English and/or Gaelic – have been easily transferable into other languages. So far, we’ve got documentaries narrated in over twenty languages, including ‘Peatcutting’ in Polish and ‘Seatrek to St Kilda’ in German, Bengali and Maltese. I’m especially glad that we’ve been able to provide material for other under-resourced languages – for instance, our video on Sabhal Mòr Ostaig, ‘Scotland’s Gaelic College’, has been narrated in Breton and in Okinawan. A special collaboration with the Irish, funded by [Foras na Gaeilge’s Colmcille grant scheme](#),³⁷ has involved reciprocal visits between Benbecula and Ranafast, Donegal, and production of [videos in both Gaelic and Irish](#).³⁸ All of these ‘Other Tongues’ videos are also fully transcribed and linked to dictionary resources.

So Island Voices has, as it were, developed a life of its own, and begun to seed similar ideas elsewhere. Not just abroad, either, but here in the UK. ‘Other Tongues’ documentaries have also been narrated in languages from the South Asian subcontinent – Bengali, Hindi, Urdu, Tamil, Maithili – so that has a washback effect, because a lot of these languages are represented among the diasporic communities here. In a related project, [Mediating Multilingualism](#),³⁹ the UHI recently brought together international partners in universities in India and Jamaica to discuss themes of common interest with UK-based community language speakers. That discussion can be explored on our [Talking Points](#) page.⁴⁰ Once the technophobe can get over the initial barrier, so much is possible these days, and it’s so rewarding. The horizons are pretty limitless, really.

Once the technophobe can get over the initial barrier, so much is possible these days, and it’s so rewarding. The horizons are pretty limitless, really.⁴¹

³⁶ <https://guthan.wordpress.com/other-tongues/>

³⁷ <https://www.forasnagaeilge.ie/support/colmcille-grant-scheme/?lang=en>

³⁸ https://guthan.wordpress.com/gaelic_journeys/

³⁹ <https://www.uhi.ac.uk/en/research-enterprise/res-themes/humanities-and-arts/language-sciences-institute/projects/mediating-multilingualism/>

⁴⁰ <https://guthan.wordpress.com/talking-points/>

⁴¹ Since participating in this interview, Gordon Wells has compiled a detailed [report](#) on the history and content of this project that will shortly be published in the journal *Language Issues*.