Unleashing Research Data Into the Future

at the Ollscoil na Gaillimhe / University of Galway

Jorrit Poelen https://jhpoelen.nl

2025-03-03

Guiding Questions

- How do you cite *your* research data?
- How do you lookup cited data *now*?
- How do you lookup cited research data *40 years from now*?

Research Data In the Wild

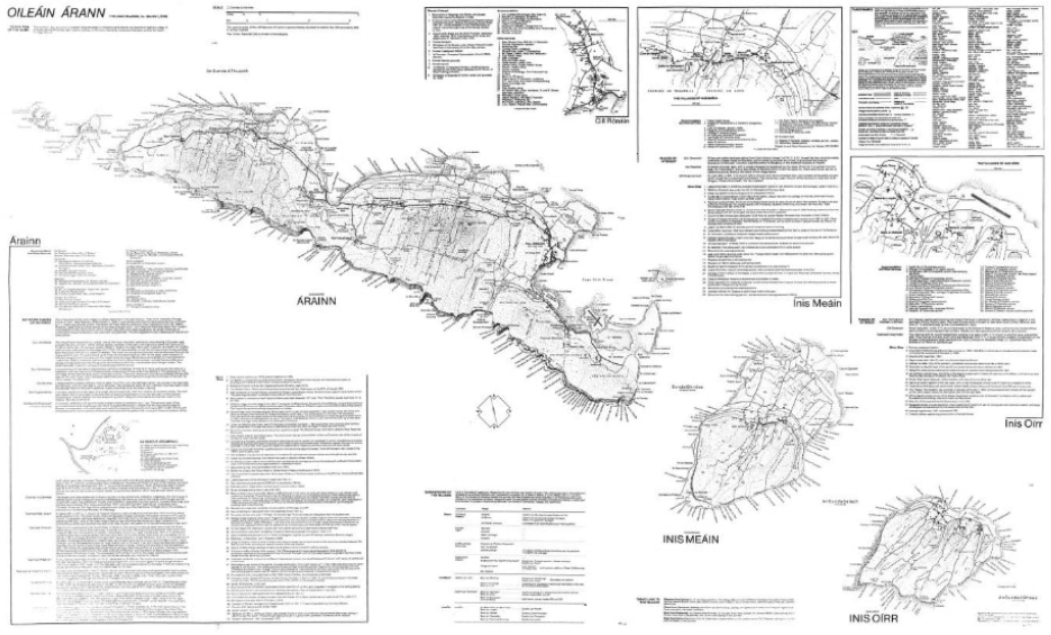
While walking the land, I am the pen on the paper; while drawing this map, my pen is myself walking the land. I wanted to short circuit the polarities of objectivity and subjectivity, and try keep faith with reality. – Tim Robinson

There's a Map on the Internet. . .

https://drawingmatter.org/folding-landscapes-the-maps-of-tim-robinson/

DRAWING MATTER

Texts
Collection
DMJournal
Workshops
Programme
Publications
About



Tim Robinson's townland index for Connemara and the Aran Islands, Map of the Aran Islands, Oileáin Árann, Folding Landscapes, 1980. Published by NUI Galway's Digital Collections.

I came to it from a fine arts background and used it as an art form. I wasn't remotely interested in what the standard way of representing limestone was, for example. I was much more interested in using some sort of graphic texture on a map that would represent my own experience of the place.
– Robinson

Figure 1: Retrieved from https://drawingmatter.org/folding-landscapes-the-maps-of-tim-robinson/ on 2025-03-02.

There's a Map on the Internet. . .

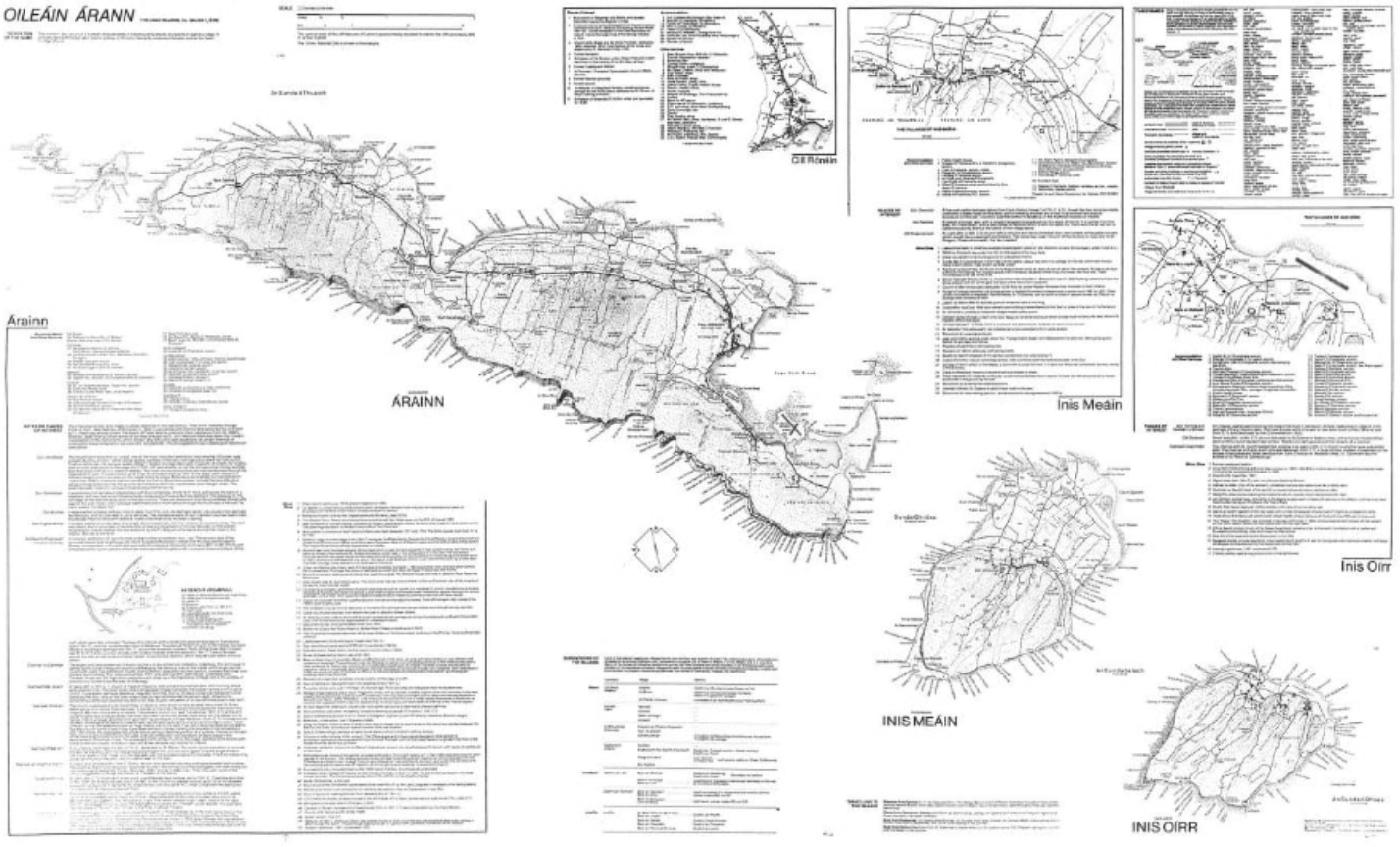


Figure 2: Tim Robinson's townland index for Connemara and the Aran Islands, Detail, Map of the Aran Islands, Oileáin Árann, Folding Landscapes, 1980. Published by NUI Galway's Digital Collections.

But, Where is the Original?

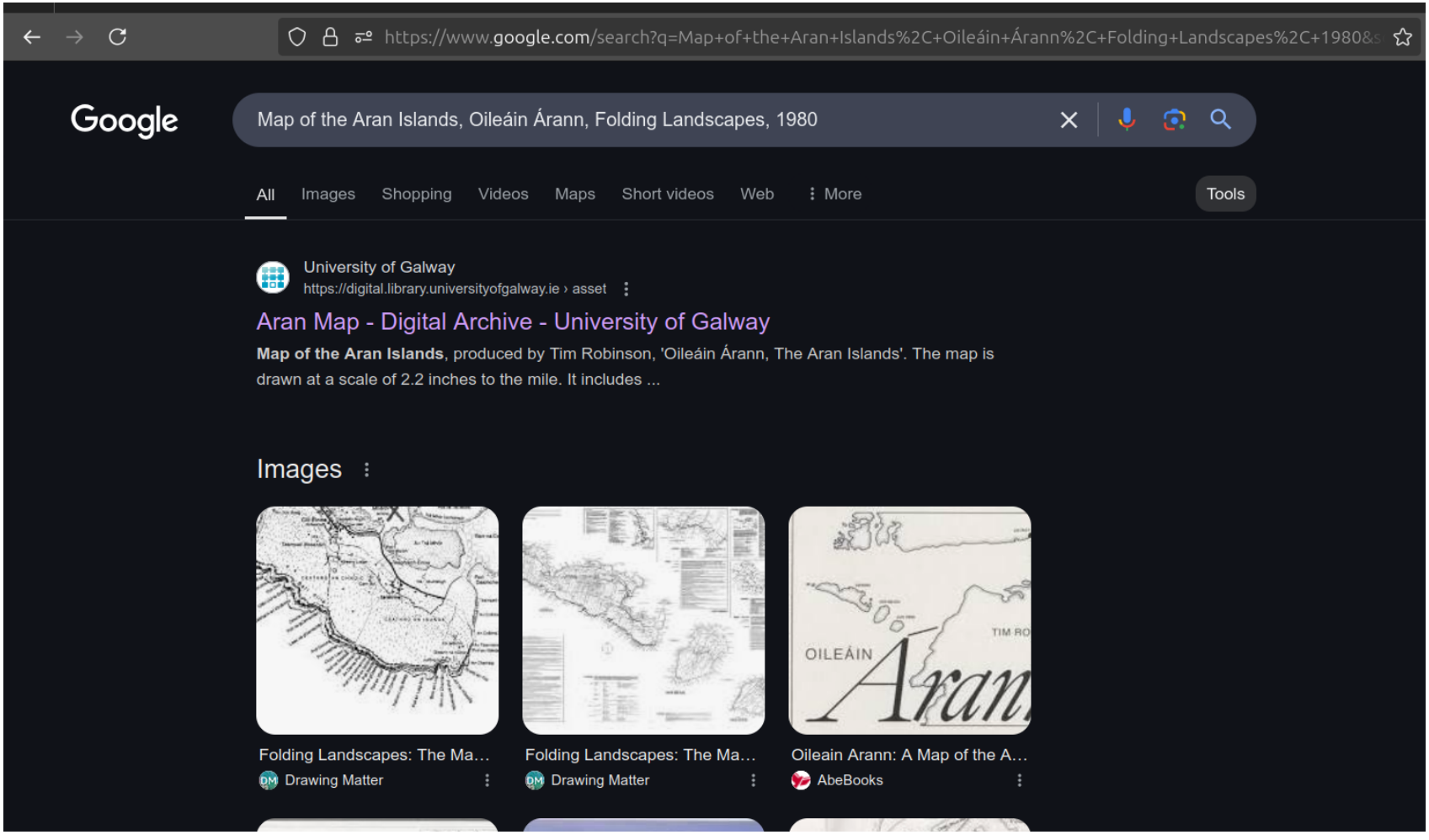


Figure 3: Internet search results for "Tim Robinson's townland index for Connemara and the Aran Islands, Detail, Map of the Aran Islands, Oileáin Árann, Folding Landscapes, 1980." on 2025-03-02

This One?

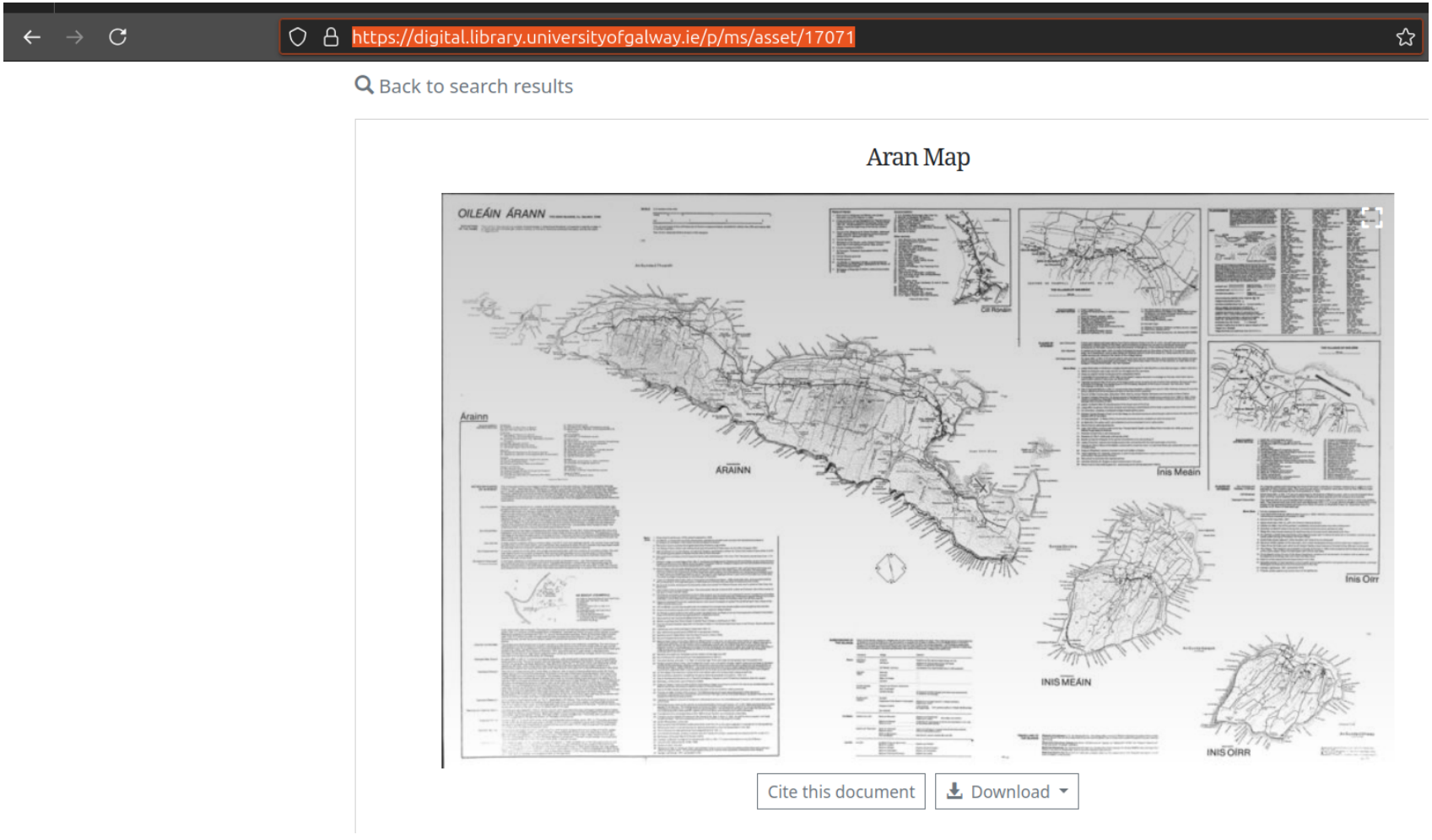


Figure 4: webpage at https://digital.library.universityofgalway.ie/p/ms/asset/17071 accessed on 2025-03-02

With Preferred Citation

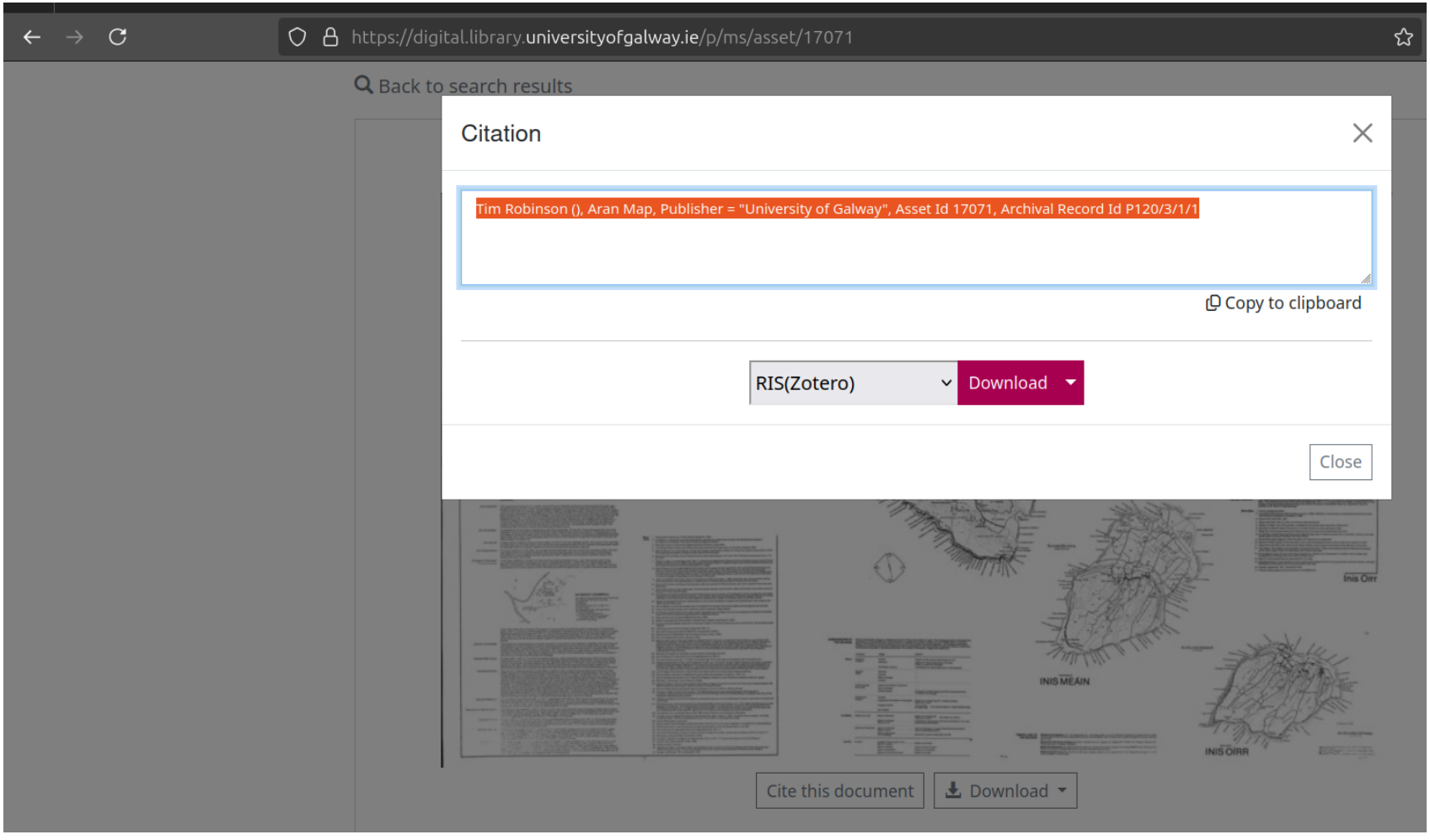


Figure 5: Preferred citation - Tim Robinson (), Aran Map, Publisher = “University of Galway”, Asset Id 17071, Archival Record Id P120/3/1/1

But . . . Which One are We Citing?

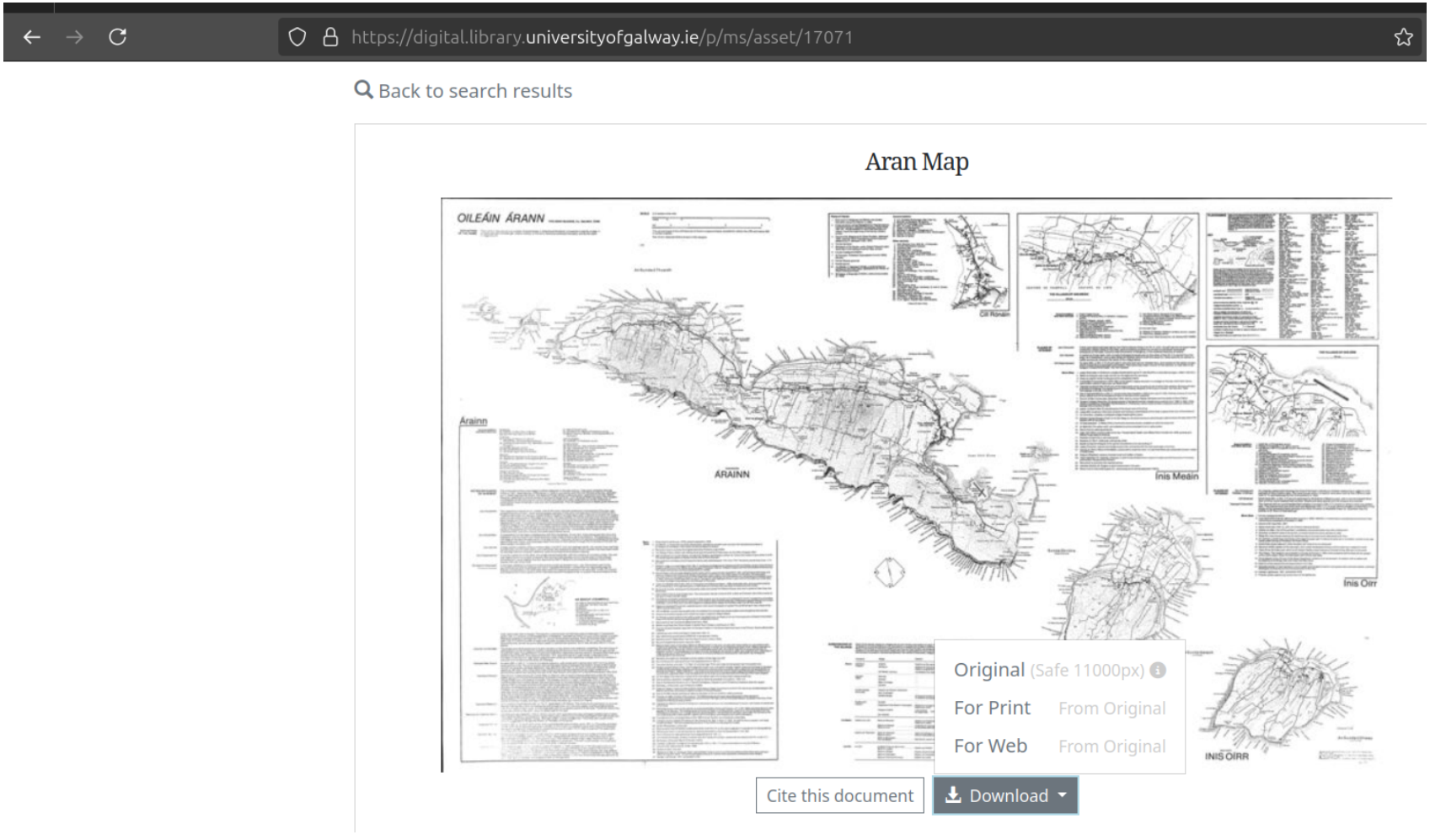


Figure 6: Variants of Robinson's Aran Map: Print, Web, Original

Trying NUI Galway's Digital Library . . .

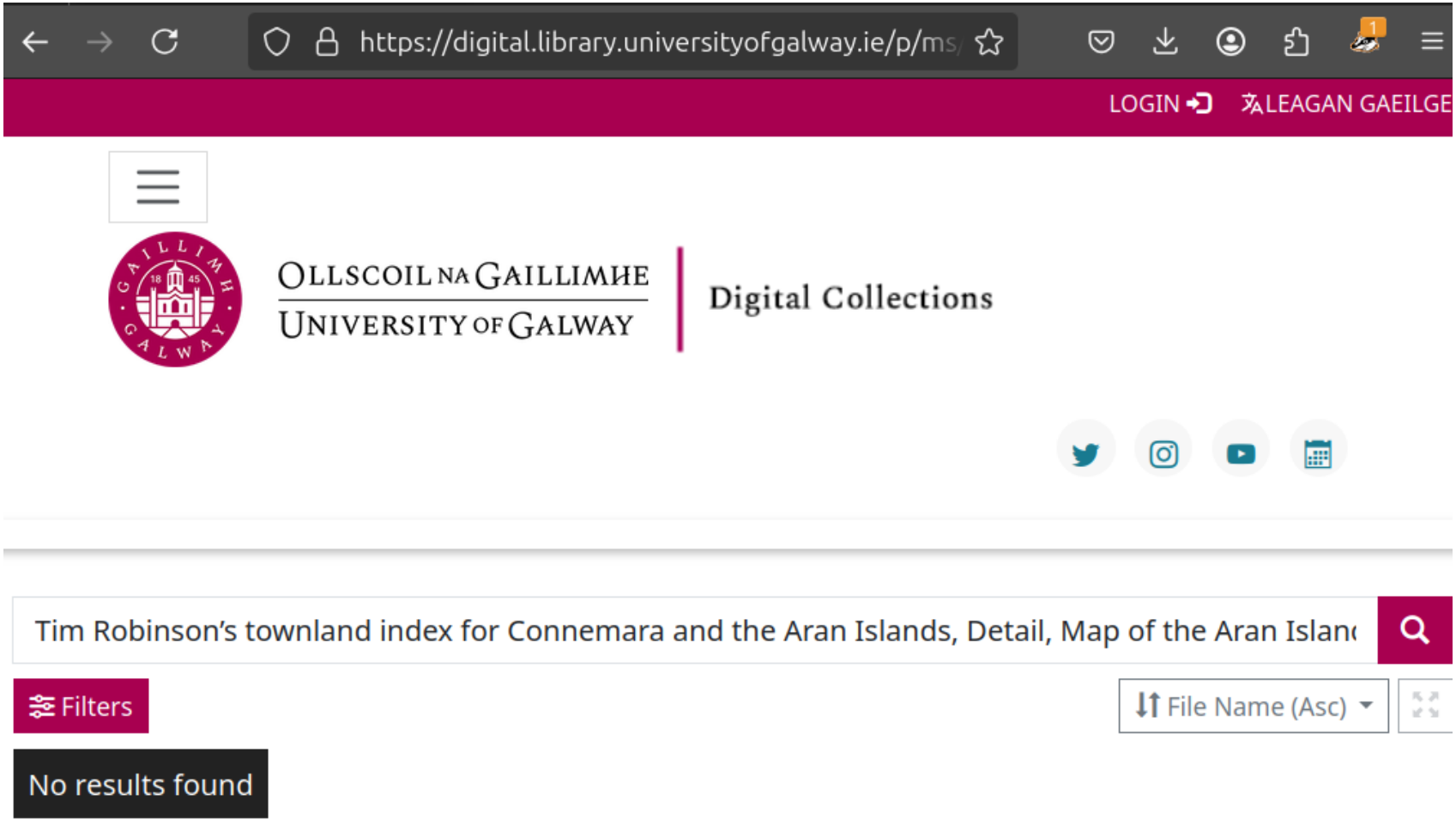


Figure 7: https://digital.library.universityofgalway.ie search results for "Tim Robinson's townland index for Connemara and the Aran Islands, Detail, Map of the Aran Islands, Oileáin Árann, Folding Landscapes, 1980." on 2025-03-02

Trying Zenodo . . .

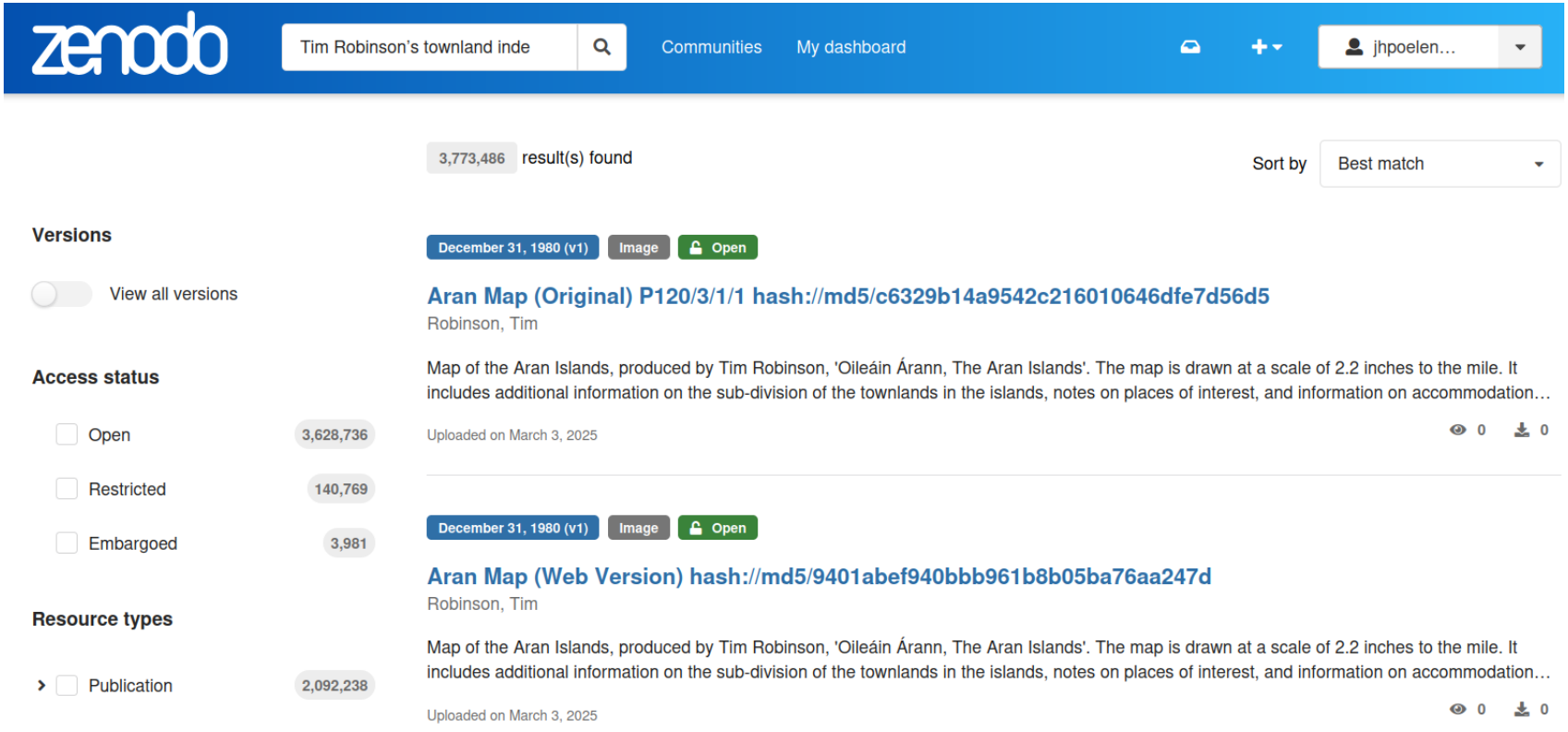


Figure 8: Zenodo search for "Tim Robinson's townland index for Connemara and the Aran Islands, Detail, Map of the Aran Islands, Oileáin Árann, Folding Landscapes, 1980."

How To Retrieve Robinson's Map Today?

- turn on the internet
- open a web browser
- search the internet for keywords
  - and rely on a delicate and complex socio-technical network
- inspect result pages
- use mouse to click on a link that looks like Robinson's map
- download image and **trust** its authenticity

How To Retrieve Robinson's Map 40 Years From Now?

- turn on the internet (***Still there?***)
- open a web browser (***Grandma, what is a browser?***)
- search the internet for keywords (***Internet search? Huh?***)
  - and rely on a delicate and complex socio-technical network
- inspect result pages
- use mouse to click on a link that looks like Robinson's map
- download image and **trust** its authenticity

How To Retrieve Robinson's Map 40 Years From Now?

- turn on the internet
- open a web browser
- search the internet for keywords
  - **and rely on a delicate and complex socio-technical network**
- inspect result pages
- use mouse to click on a link that looks like Robinson's map
- download image and **trust** its authenticity

Likely will not work due to intricate network of dependencies.

How To Retrieve Robinson's 40 Years From Now?

My (Crazy?) Proposal: Sign the citation [1]

Robinson, T. (1980). Aran Map (Print Version) P120/3/1/1 hash://md5/9027bb8d372e4ffb9fabe74cab6a3434. University of Galway. https://doi.org/10.5281/zenodo.14958167

[1] Elliott M.J., Poelen, J.H. & Fortes, J.A.B. (2023) Signing data citations enables data verification and citation persistence. *Sci Data*. https://doi.org/10.1038/s41597-023-02230-y hash://sha256/f849c870565f608899f183ca261365dce9c9f1c5441b1c779e0db49df9c2a19d

How To Retrieve Robinson's Map 40 Years From Now?

. . . by searching the universe (in, and beyond, the internet) for the content with the unique fingerprint hash://md5/9027bb8d372e4ffb9fabe74cab6a3434 .

. . . in addition to searching by keywords

Zenodo Search, Take 2.

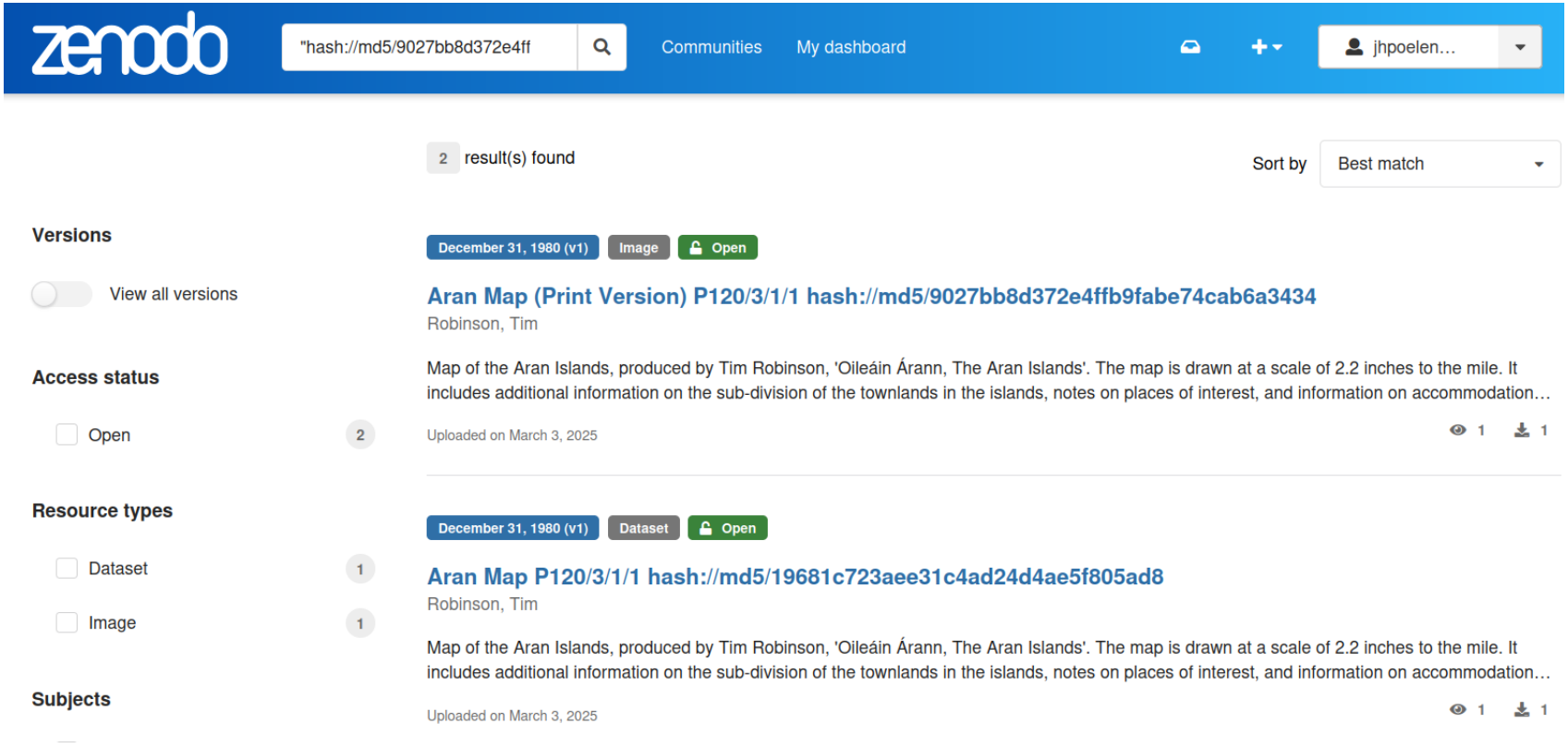


Figure 9: Searching Zenodo for "hash://md5/9027bb8d372e4ffb9fabe74cab6a3434" on 2025-03-03

How Would *You* Carry Robinson's Maps Into The Future?

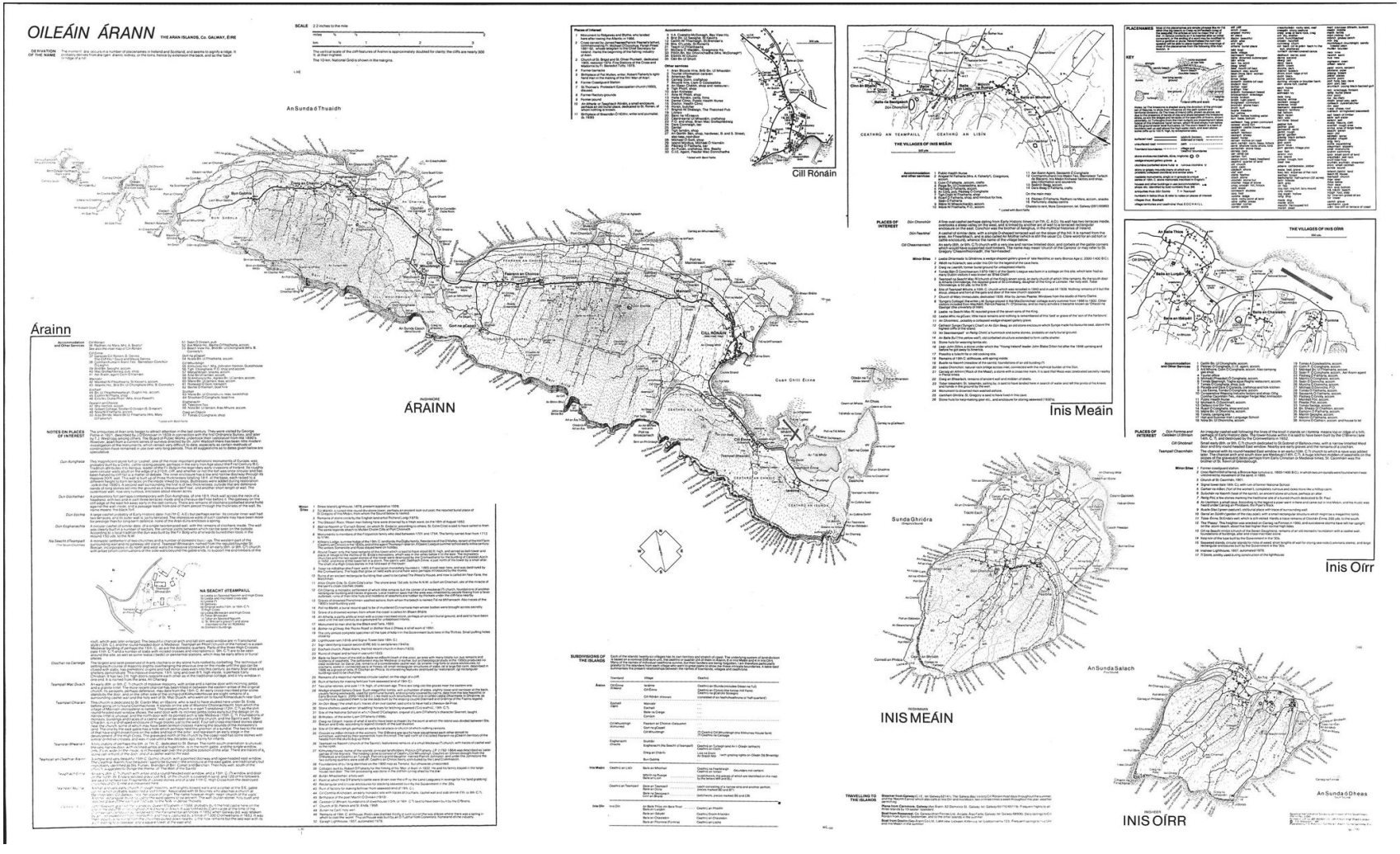


Figure 10: Tim Robinson (), Aran Map, Publisher = "University of Galway", Asset Id 17071, Archival Record Id P120/3/1/1.

Guiding Questions

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Extra

Internet Is Designed For *Exchanging* Information

The internet is a powerful tool for exchanging digital information. But the Internet's contents changes constantly: websites are launched and taken down, webpages change, and content gets archived or lost.[2]

[2] Jorrit Poelen. 2024. Unleashing Digital Knowledge Into The Future. Accessed on 2024-02-06 at https://linker.bio line:hash://sha256/8ac18eb75ff20d40d1d60bb6ad5a745eb528093d1ffbe373e3847c131460

Internet Is *Location-based*

By design, a web address, or Uniform Resource Locator (URL), points to a specific internet location from which a resource, like a webpage, can be retrieved. However, a URL does not provide a way to verify that a retrieved webpage was the one we asked for. [3]

[3] Jorrit Poelen. 2024. Unleashing Digital Knowledge Into The Future. Accessed on 2024-02-06 at https://linker.bio line:hash://sha256/8ac18eb75ff20d40d1d60bb6ad5a745eb528093d1ffbe373e3847c131460

Finding Content By Their Location Is . . . Tricky

Imagine using a URL-like reference to find a book at a library: instead of locating a book by what it is (e.g., title, author), you refer to a book by its location (e.g., third shelf on the second row next to the window). With this, a book becomes unfindable if moved to another shelf. And, if you do manage to find a book at the referenced location, how would you know you've found the book you are looking for? [4]

[4] Jorrit Poelen. 2024. Unleashing Digital Knowledge Into The Future. Accessed on 2024-02-06 at https://linker.bio line:hash://sha256/8ac18eb75ff20d40d1d60bb6ad5a745eb528093d1ffbe373e3847c131460

Finding Content By Their (Summarized) Content Is . . . What Librarians Do

> *Instead of pointing to where books are located, librarians point to them using a bibliographic reference. For practical reasons, only a few identifying clues are included in such a reference (e.g., author, year of publication, title, and publisher).* ***So, librarians refer to content by what it is, and knowing where it may be located is secondary.*** [5]

A bibliographic citation:

Darwin, C. 1859. On the Origin of Species. John Murray.

[5] Jorrit Poelen. 2024. Unleashing Digital Knowledge Into The Future. Accessed on 2024-02-06 at https://linker.bio line:hash://sha256/8ac18eb75ff20d40d1d60bb6ad5a745eb528093d1ffbe373e3847c131460