

# What does Open Science mean for disciplines where pen and paper are still the main working methods?

*Open Science and its wider application to the social sciences and humanities, is predicated on the idea that research can be reproduced and shared across digital platforms, but to what extent do researchers actually use digital tools a part of their work? Commenting on a recent study into the workflows of social scientists and humanities researchers, **Deirdre Watchorn** argues open science policies should adopt more nuanced approach to these different kinds of research.*

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The push towards open science across all disciplines has gained steam in the past years, as new mandates are being delivered and new business models are being developed at high speed. Most of these initiatives, however, take research cultures in the sciences and technology as their starting point. The humanities and social sciences, if considered at all, are treated as an afterthought.

Our insight research investigating the working practices of humanities and social science (HSS) researchers confirms this tendency. What's more, it suggests a disconnect between some demands of open science and the very nature of HSS research itself.

Take the [European Commission's definition of open science](#), for instance: "Open science is a system change allowing for better science through open and collaborative ways of producing and sharing knowledge and data, as early as possible in the research process, and for communicating and sharing results."

Open science as defined by the EU and other funding bodies is predicated on a number of key ideas:

- that academic research involves analysing and producing data of some kind
- that this data can be stored or shared electronically
- that it is created through digital collaboration

But our research finds that many HSS academics rarely use digital working methods and collaboration tools and struggle to understand how to 'share data' when they typically work with texts, artefacts, collections and objects.

## Examining workflow

Conducted across Germany, Austria and Switzerland, [our research](#) surveyed 641 HSS researchers and included in-depth interviews with 14. Our team asked detailed questions about their workflow and how they conducted their research day to day: the sources they access, how they shared their work, the technologies they did (or didn't) use and the processes they typically deployed to get the work and writing done.

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Broadly, the findings paint a picture of an HSS research community that uses enduring methods to conduct research – in many cases methods that have remained unchanged for years – and that they do so because they work. Regardless of age or experience, the study finds that the vast majority of scholars prepare, plan, structure and write their material in a way that makes little use of the collaboration platforms, tools and reference management technologies available.

## Traditional methods prevail

94% of social scientists say they use Microsoft Word to write up their work. The vast majority also use Word to manage their references with just one in five using reference management software. Indeed, one in four humanities scholars draft early versions of their manuscripts in long hand. Most of the researchers we surveyed have no need for digital collaboration tools either – perhaps because the majority work alone – and where collaboration is needed, HSS scholars prefer to use email. They also overwhelmingly use email rather than social channels to promote their work.



This tried and tested approach to conducting research extends to what HSS researchers search for and how they search for it. While digital discovery methods via online university catalogues and Google Scholar are extensively used, it doesn't appear these resources are particularly liked.

## Let's get physical

The study also indicates that HSS researchers prefer to work in physical spaces such as libraries, archives and collections and value the serendipity that working in these environments brings. Research in the humanities and social sciences can often be a creative process of discovery. Working from physical spaces surrounded by texts, books, artefacts and artworks nurtures and supports this creative process in a way that a digital environment simply can't.

The study finds just 1% of humanities scholars conduct experiments which involve 'data' and just 6% undertake quantitative research – facts that won't surprise many. The vast majority analyse primary sources and work with secondary material which can take a variety of forms. The very nature of humanities research in particular means that these scholars don't often analyse datasets. Instead, they study texts, conduct interviews, collect newspaper clippings, analyse diary entries, images, recordings, archive footage, letters and videos.

## The problem with 'data'

With this in mind, perhaps it's no wonder that many HSS scholars struggle with the concept of 'open data'. What does 'data' mean to a classicist analysing *The Iliad*? What does 'data sharing' mean to a historian who works on their own studying the Spanish Civil War? And even if we were to treat primary materials that humanities scholars work with as data: How are these scholars supposed to share that data when it sits in folders, boxes and shelves in archives and has never been digitized?

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HSS scholars are not resistant to change nor reluctant to use new technologies. New initiatives such as the [Journal of Digital History](#) prove that humanities researchers want to embrace data-driven, digital scholarship. But for now, the digital humanities remain a relatively small subfield. While there will be many reasons why individual HSS researchers remain invested in traditional working methods, we can only assume that they do so because these methods remain effective.

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While it's true that in many cases, science, technology and medicine (STM) scholars do use more advanced digital workflow tools to execute and evaluate their data and collaborate, this may be because their needs are different. HSS scholars see the advantages of open science – both in terms of transparency to their wider discipline and the benefits to their own work. They just don't necessarily see how it applies to them.

## A new understanding

So, what needs to change? Funders and lawmakers must consider the specificities and the diversity of both humanities and social science research cultures because 'data' means different things to different disciplines. In addition, researchers themselves need to consider what data sharing means for the humanities and become more familiar with the challenges of open science so they can formulate their requirements. Thankfully, initiatives such as [The Digital Research Infrastructure for the Arts and Humanities](#) (DARIAH) are playing a pivotal role in helping this to happen. [New debates](#) considering what *open humanities* might mean for how scholarship is produced and communicated are very welcome too.

Our understanding of academic workflow must take into consideration that different academics in different fields have different needs. Our research finds that HSS scholars thrive in physical places, surrounded by books, objects, artworks and artefacts. They rarely use 'data sets', they want to get lost in primary texts, discover fresh ideas and break new ground. While digital innovation can advance many fields, sometimes a pen, a library and notebook are what some scholars truly want and need.

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