

Real-time data on global collaboration networks can support new research and create further connections

blogs.lse.ac.uk/impactofsocialsciences/2017/05/23/real-time-data-on-global-collaboration-networks-can-support-new-research-and-create-further-connections/

5/23/2017

Cloud-based technologies provide easier access to the infrastructure and tools needed for research collaboration. The use of these tools can also provide new insights into current collaboration patterns; a picture of what is happening right now rather than what has happened in the past.

John Hammersley, reporting on a recent study on research collaboration, considers how this real-time data can be useful in supporting the work of researchers and university libraries. By bringing together communities that form around new cloud-based tools, and local communities that support research within institutions, it is possible to create further connections within both.



Do you remember the first group of friends you met at school? Chances are you do – as a species, and even from a very early age, we are drawn to form communities and social groups. Collaboration and communication are two of the key skills we’re learning even before we can walk.

The need to form groups is so ingrained in us that the effects of isolation on the human psyche are stark – studies have shown that we’re [dramatically affected by perceived social isolation](#), and that it “is a risk factor for, and may contribute to, poorer overall cognitive performance, faster cognitive decline” and many other negative traits. In other words, it’s important not to be isolated.

But how does this translate into our working life, and specifically the working life of an academic researcher?

As researchers, we form lasting mentor-apprentice relationships throughout our early career; beginning as the apprentice and moving on to mentoring as we develop our skills and experience. I expect that in addition to being able to name our childhood friends, we can all name our early mentors and our first apprentices. With scientific research also becoming [more international and more collaborative](#), how do our wider collaborations – especially the larger projects that span national and international boundaries – fit into this social picture?

Finding effective methods for collaboration at scale and distance is often challenging, for researchers and institutions alike. Knowledge and detail is often siloed, and traditional methods of communication and sharing can contribute to a fractured and incomplete record of research – one where important details are left locked away on a sole researcher’s laptop, or buried in a mass of emails.

Over the last 30 years, the spread of the internet, growth in mobile communication networks, and rise of social media networks have made it easier to connect with people, wherever they are around the world. Now, cloud-based technologies are also providing easier access to the infrastructure and tools needed for research collaboration – almost all of the innovations in scholarly communication over the past ten years featured in [this survey of the research landscape](#) are cloud-based, or have a cloud-based element.

By solving real, immediate problems in research, and by lowering barriers to entry – effectively, all you need is a web browser – these tools are being readily adopted by millions of researchers and students around the world. This adoption of new technologies creates vibrant, engaged, and naturally-formed communities of advocates who, in turn, help to further spread awareness and adoption of these tools. These communities help drive and enact real change in research communication, from the ground up – much like how local communities bring about change in their local area.

This use of new cloud-based tools can also provide new insights into collaboration patterns in research. Traditional markers of collaboration, such as the co-authorship lists of published papers, are often lagging in time. They provide

only a picture of what *happened in the past*, rather than a picture of what is *happening right now*.

A [new study on collaboration](#) (which I helped to coordinate) takes a first look at how active collaboration data can provide insight into collaboration patterns on national, state, and institutional levels.

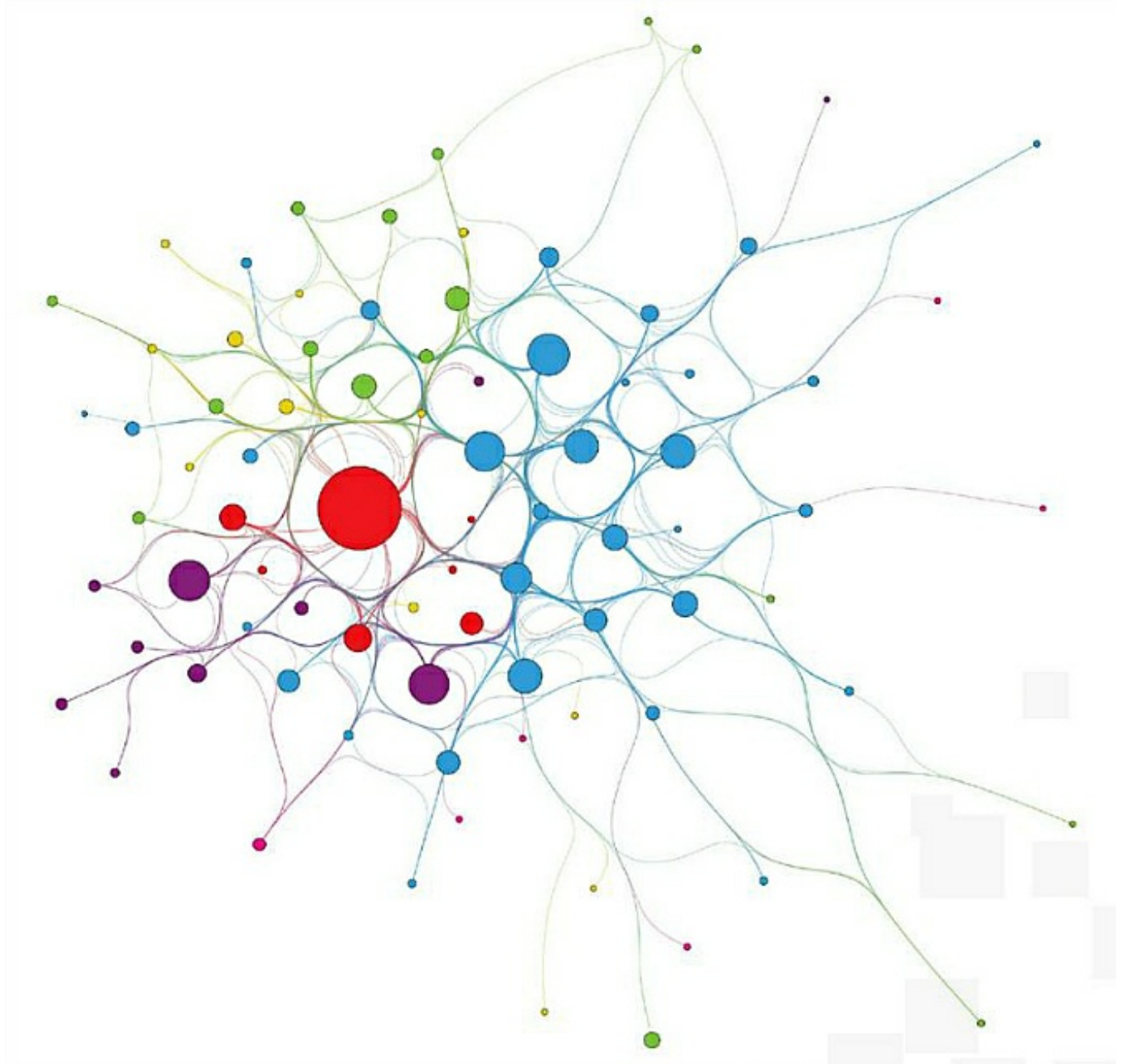


Figure 1: Visualisation of the collaboration network between countries on Overleaf. Each edge connects two countries, each circle represents a country. The number of Overleaf documents associated with each country determines the size of its circle. Red denotes North American countries, Blue denotes European countries, Purple denotes South American countries, Green denotes Asia-Pacific countries, Yellow denotes West-Asian countries. Edges are collected using force-directed edge bundling. This figure is taken from [The Connected Culture of Collaboration](#) report.

By providing a real-time view on global collaboration networks, this active collaboration data provides a

complementary analysis to that being performed on post-publication data, such as this [recent analysis of global research trends](#).

What is perhaps more exciting is that, on a local level, this real-time data can provide researchers, institutions and libraries with useful, actionable insights on the collaboration that is taking place on their campuses today. For instance, if a particular department is discovered to be especially collaborative (either internally or inter-departmentally), the university library would be able to help support and foster such collaboration more widely, through interdisciplinary workshops and the sharing of best practices.

We are only at the very beginning of exploring these insights, and at Overleaf we are working with researchers and university libraries to understand how this data can be useful in supporting them in their work. As a researcher myself, my hope is that by bringing together the communities that form around these new cloud-based tools, and the local communities that help support research within an institution or lab, we can help to create further connections within both.

Maybe one day we'll have the best of both worlds: a strong connection between the real, physical communities we need in order to feel safe and to stay healthy, and the wider, often virtual ones that help us generate the innovations and discoveries we all hope to contribute to in our research careers. With the continued growth in both international collaborations and the adoption of tools to support and foster such collaborations, maybe that day isn't too far away.

More extensive discussion of the findings of this study can be found in “[The Connected Culture of Collaboration](#)”, a Digital Science report curated by Overleaf. The report is available for download from [Figshare](#).

Note: This article gives the views of the author, and not the position of the LSE Impact Blog, nor of the London School of Economics. Please review our [comments policy](#) if you have any concerns on posting a comment below.

About the author

John Hammersley is Co-founder and CEO of [Overleaf](#).

- Copyright © The Author (or The Authors) - Unless otherwise stated, this work is licensed under a Creative Commons Attribution Unported 3.0 License.