Altmetrics

A practical guide for librarians, researchers and academics
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Altmetrics
A practical guide for librarians, researchers and academics

Edited by
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Introduction

The purpose of this chapter is to give an introduction and context to the book and its theme. It will give an overview of the changes occurring in academia right now that are part of a wider picture that includes open access, MOOCs (Massive Open Online Courses), big data, emerging learning technologies and, finally, altmetrics. It will explain why this change is happening, how it is all connected, and how some library and information professionals are at the heart of it, while others should pay heed to it. It will provide an overview of the key ideas and themes within altmetrics as well as how this fits in with existing academic cultures.

Altmetrics focuses on research artefact level metrics that are not exclusive to traditional journal papers but also extend to book chapters, posters and data sets among other items. It offers an alternative indicator of attention, review and conversation that adds a highly responsive layer to the slower to accrue traditional research metrics.

Altmetrics is one of those terms, like MOOCs and big data, that many people in academia have heard of but are not entirely sure what it means. For a start, it sounds rather geeky, and perhaps something that sits within the domain of a group of experts, for example statisticians. In reality it is much simpler than that and has a potentially much wider audience, some of whom are already unknowingly using some of the technologies that contribute to altmetrics. Altmetrics has the potential
to be of use to every academic, PhD and master’s student thinking of going into a research career. While the term and the concept of altmetrics have been around in popular use only since 2012, the ideas and opportunities that seek to exploit it have been around for longer.

Although altmetrics is not commonplace or widely discussed outside the offices of some fund holders, publishers, PhD students, scientists and a few librarians, it has significant traction and potential. So much so that this book was commissioned to help library and information professionals gain a better understanding of the subject. To this author’s mind, librarians and information professionals have an important part to play in the use of altmetrics, and the opportunity is there for them to take, should they wish to do so.

While the altmetrics movement continues to grow and gain traction in some areas of research, it is unlikely that by the time this book is published it will be entrenched within academia. MOOCs have taken a similar length of time to appear on the radar of the university teaching community and it is likely that, for most, altmetrics is still just a blip on the horizon. There are several reasons for this, which this book will go into in detail later on.

**The purpose of the book**

This book sets out to achieve two things. Firstly, it is theoretical: it explains why altmetrics has come about and how it fits into the bigger picture of research and academia. Secondly, it is a practical book, as understanding the theory of altmetrics or any other new technology, platform or idea is of little value if a user cannot think of how it can be applied in the workplace. The book explains how different audiences can be reached and the methods you can employ, even with minimal resources. The contributors to this book have sought to provide you with a complete guide to the history of metrics, their importance and new developments, and to explain why some have seen the need to change how we measure and communicate scholarly outputs. The book aims to give practical advice to library and information science (LIS) professionals and academics by explaining the increasing number of tools available for researchers and librarians to measure, share, connect and communicate their research – because, while altmetrics is the reason for writing this book, it would mean very little if the connecting
technologies and ideas were not also covered. To some extent altmetrics is like an iceberg; on the surface we may see only a collection of materials and measurements, while below the waterline a larger presence exists. Part of this book aims to give those supporting researchers – not only LIS professionals but also research support staff – the skills needed to deal with the many different scenarios they may come across when trying to engage research staff with new technologies. Put simply, you cannot just tell someone to try a technology in the hope that it will change how they work. Instead, you need to explain why they should change, the benefits, the pitfalls and, most importantly, the practical skills to make it happen.

On the surface, altmetrics may seem daunting to some, and doubly so to those who have not yet dipped their toes into the world of social media, networks and (to return to a much-forgotten term) Web 2.0. With so much choice available to consumers, whether it be smartphones, shoes or even bread, there can often be a problem of decision fatigue, and with altmetrics it is no different. There are literally hundreds of online and electronic tools that can now be used within the academic setting. Some, such as Twitter, are not only cross-disciplinary but also cross professional and personal boundaries. More recently an increasing number of niche and specialized academic tools have appeared, making the choice encouraging for some, and for others an even greater deterrent. These deterrents or barriers relate to issues of time, privacy, application, security and choice – the latter translating into ‘why choose one technology when a better one may come along next week?’

For anyone wanting to understand altmetrics and, more importantly, to encourage others to use it, it is important to understand which tool does what and why you and academics you work with should use it. In the field of learning, technologists, lecturers and teachers apply a pedagogy to technology when they employ it, otherwise they end up using technology for the sake of it. This can be counter-productive to the learning process, as students learn how to use a technology but don’t necessarily discover more about the core topic the teacher is covering. The same has to apply in research, where there is an increasing demand on academics to publish papers, win bids and prove impact, and altmetric activities may be seen as an unnecessary extra.
The research cycle

For many years now the research process and, for the most part, the researcher’s environment have been stable. They can often be summarized as a simple cyclical process that begins from an idea or hypothesis, collaboration or a call by fundholders. Once researchers identify a research opportunity and obtain funds and time (although the latter is trickier to source when juggling multiple responsibilities), they begin their project in earnest and – whether it is based in the lab, the field, or a coffee house, or at their desk – at the end of the project they write up research in the hope of publishing it in some format. This is the model, and there has been little deviation from it for as long as anyone can remember. Technology may have come along to aid the process of completing the work, from word processors to high-performance computing systems, yet most other things have stayed the same. The process of promoting the published outcomes of the research was usually via a few formal, static channels, most notably the peer-reviewed journal and conference presentations. The model is still widely practised and shows little sign of changing wholesale until academics become sure of the benefits of new forms of scholarly communications.

Communication of new research has often been left for the researcher to do, whether via e-mails to personal networks or in conference presentations. Publishers have released journal ‘table of contents’ alerts, but in reality very little else happened beyond the research appearing on the journal shelves in the library or in searchable databases. That is, until other researchers and professional support staff ran literature searches and discovered the new-ish research. These papers then formed part of the evidence base for future research via the system of other researchers citing them.

Things have moved on somewhat since then. Journal publishers, although not employed to promote one paper over another, are doing more to disseminate research via the use of social media, while at the other end of the spectrum many researchers are taking it upon themselves to share their research and findings across the web via blogs and social media. This has of course been happening for some time in very small silos on the web, but for the most part the version ‘Research 1.0’, with its limited scholarly communications, is still very much the normal situation.
The course of the book

This book brings together various experts in their fields to help guide readers through the practical and technical aspects of altmetrics. Guest chapter writers help to synthesize the ideas and reasons that have led to a variety of innovations and technologies coming together with the goal of measuring research.

Chapter 2 makes the connection between altmetrics and social media and explains how we have got to where we are and where it might take us. The web, and later Web 2.0 and social media, brought about the right ingredients for the development of platforms like Mendeley, Altmetric.com and Impactstory.

Chapter 3 is written by my colleague Andrew Booth from the University of Sheffield, who is no stranger to writing for Facet Publishing on topics relating to the library and information world. Andrew provides an interesting, entertaining and concise history of traditional metrics and their development, and the reasoning and politics that have grown up alongside them.

As you will find by reading this book, altmetrics has a lot of potential not only for academics but also for fund holders, publishers and libraries. At a time when libraries are having to tighten their financial belts and cut their expenditure, altmetrics can provide some of the analytics to help tough decision making. In Chapter 4, Ben Showers, formerly of Jisc, who has previously written for Facet Publishing on analytics and metrics, covers the evolution of library metrics, including bibliometrics. Ben looks at what is happening in libraries right now and where the future seems to be pointing us to.

Euan Adie, the founder of Altmetric.com, looks at the other side of the metrics fence and altmetrics as a whole in Chapter 5. Euan’s chapter, as a sequel to my Chapter 2 explaining the rise of Web 2.0 and social media, looks at the other pieces of the jigsaw and brings altmetrics firmly into the academic setting. The chapter explains the evolution of the several key players in the altmetric and academic publishing world who have tried to bring about a whole new way of looking at research outputs.

We then move on to Chapter 6, by another author well versed in altmetrics and its potential for the academic community. William Gunn is Head of Academic Outreach at Mendeley and he discusses the various ways in which Mendeley is looking at the data coming from the
references that Mendeley users store in their accounts, and how this can form alternative metrics. He discusses the importance of discovering previously unseen data about published research and turning it into useful information. Previously, citations and the impact factors of journals were the means by which research was measured. William explains that these days everything from downloads, views and shares can be checked and counted and can give a new angle on academic quality. Although William is employed by Mendeley, this chapter is by no means a sales pitch for the research technology company (now owned by Elsevier), but gives a balanced view of where this arm of scholarly communication and measurement is going.

My Chapter 7 aims to give practical advice to LIS professionals and academics on how they can employ altmetrics and the associated technologies in their organizations. The chapter provides a mixture of tactics and case studies that can be used to help make the most of new ideas and technologies, especially in the face of inertia and technology-platform overload.

Chapter 8, again written by me, is about the great variety of altmetrics and related tools that can be used by LIS professionals and academics. One of the issues touched on in Chapter 7 is that of inertia and organizational change. Researchers and LIS professionals face the problem not only of technology choice but also that of understanding each technology and its application. It can be hugely time-consuming to explore new websites and technologies, especially when another, better solution can be just around the corner. The purpose of Chapter 8 is to give brief summaries of the technologies and the ideas behind them, and thus relieve LIS professionals of the job of exploring what is available. The list is by no means complete, as only a wiki or online bookmark could achieve that feat. The chapter also presents various scenarios to help readers make the connection between the technology and the use – in essence, the research pedagogy. The list is by no means exhaustive, as new tools are appearing every week and their use is subjective; one tool may be seen in an altmetric context by one person but not by another. The chapter aims to demonstrate why, in this author’s opinion, each tool is worthy of note in the altmetric setting. Some tools are very niche, and others are purely transient in their use, in that you may use them only once to achieve a goal.
Chapter 9 investigates the increasingly important topic of post-publication peer review. Although it is not always associated as an altmetric and is still very new to most academics, post-publication review, anonymous or otherwise, remains a contentious topic in some domains of academia. The purpose of peer review is to measure and assess the quality of a piece of academic work. Post-publication review is the same, but happens after a paper has been published. Its output is very similar to that of altmetrics in that it gives new insights into a piece of published work. It also provides opportunities for collaboration between authors as they start to discover other researchers who are engaged with similar ideas and work.

Chapter 10 is written by Claire Beecroft, from my department at the University of Sheffield, who looks of the opportunities that can be afforded by making better use of mobile or tablet devices. Altmetric tools have yet to appear in any kind of notable numbers on mobile devices, yet this is only a matter of time. On the other hand, online tools for sharing (such as Twitter) and writing (such as blogs) can now be accessed easily. Given that this book discusses the problems of information overload and time management, it is important for LIS professionals and researchers to discover how to make better use of their smart devices as part of a seamless altmetrics experience.

The penultimate chapter is about the process of open peer review, an area that is increasingly being discussed within the academic community and has much similarity to altmetrics. Whether this process takes place before a piece of research is published, or afterwards, when a long tail of scholarly dialogue is opened up, it is, like altmetrics, a challenge to the status quo. The chapter discusses the pros and cons of open peer review and looks at some of the leading platforms, whether they be journals, databases or small third-party startups. The book concludes by reviewing the issues covered in the previous chapters and discussing whether altmetrics has a future. It aims to predict – although in technology that’s a pretty tough call – whether, in time, altmetrics can gain wider appeal and traction. Since I was asked to write this book, back in 2013, a lot of things have changed. Altmetrics has shown no signs of going away, but neither has it replaced traditional metrics. I will discuss what that means for academia and whether, in my view, we will ever find an ideal solution to the problem we now face with
regard to scholarly metrics and communication since the advent of the web and, more importantly, the social web.

**Conclusion**

Altmetrics has not happened by chance; if anything, things have been percolating for some years, thanks to a mixture of social and cloud-based academic and non-academic websites and tools. Jason Priem first used the term ‘altmetrics’ in a tweet back in 2010, and this was part of the driving force for Mendeley, figshare, Impactstory, Altmetric.com and others to bring disparate communities and ideas together under its banner. As someone whose role is very much to keep an ear to the ground for new ways of working and technologies, it was inevitable that I would come across altmetrics – which, according to my e-mail archive, I did in April 2012. Alongside other technologies and ideas that I have promoted and investigated, I try to maintain an objective view. It can be too easy to be swept up by new platforms and ideas and decide that everything that came before is now redundant. But constantly moving forward can have its pitfalls, as too little time may be given to reflection and gaining a deeper understanding of an idea or technology. Yet, as in the case of MOOCs for the teaching side of the academic organization, change is inevitable, thanks to technologies. While MOOCs have not destroyed or revolutionized universities on the scale that some predicted, they have driven many to assess existing systems and cultures.

Altmetrics exists, and is to some extent gaining a foothold. In various research areas, decision makers, fundholders, publishers and researchers are starting to take notice. In late 2014 the first European altmetrics residential conference took place at the Wellcome Trust in London – although one should also note that a one-day altmetrics conference had taken place in the USA two years earlier, featuring some of the key protagonists. The Wellcome hosted an inaugural altmetrics conference, quite fittingly titled 1:AM, which quickly sold out. It featured a series of workshops and discussions by fund holders, publishers, researchers, librarians and altmetricians, if such a term exists. The conference addressed many issues, notable among them being one raised by Jeremy Farrar, the Director of the Wellcome Trust,
who said: ‘We are in danger of overburdening the research community with ever more approaches, and it is on the edge of not being able to cope…such that we will destroy [its] creativity and innovation.’

As with MOOCs, it is possible that altmetrics may not be the end product, but a path to something else. Hopefully, that will be something sustainable and transferable that provides value to everyone and everything, but only time will tell. If altmetrics is to gain traction in research and its end result is to lead to something else that improves scholarly communication and measurement, it will have achieved its aim. In order to do this, we need a better understanding of why this is happening and how we can iron out any wrinkles. Simply burying one’s head in the sand and continuing as before, when the world outside is changing, is no longer acceptable. Change can be very frightening and not always for the better; hence the need to understand what these tools can do. When an academic asks you about a tool like Twitter or Mendeley, your advice can be about more than just the technical dimension, and can also be about how these things all connect together to aid scholarly communication and measurement.

Research is being formally measured, and the word ‘impact’ is appearing evermore in offices and meetings across academia. Like governments and their policies, the ways in which research is measured and rewarded are changing, and will continue to change in a web-focused world. The altmetrics story still has some way to go, and how it plays out is anyone’s guess. The seeds have been sown and the technology is being put to use by various individuals and organizations. This book aims to explore all of the possibilities, and to give readers a balanced view of them and whether they should be exploited by the researchers whom LIS professionals support.