9.

THE ETHICS OF SCHOLARLY PUBLISHING AND ACADEMIC SOCIAL MEDIA: AN ODD COUPLE?

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Abstract

The chapter addresses the issue of the ethics of scientific publication to academic social media. This new approach allows us to highlight two important issues in the mutation of internalities and externalities in the course of scientific communication. First, the strategies by which new actors in scientific publication, originating from the Web, seize the principles of Open Access to reformulate them and subordinate them to their own development and monetisation strategies. Secondly, the functionalities and services developed contribute to introducing a new media dynamic into researchers' practices. These raise ethical issues because of their incompatibility with the normative values of science.[*]

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1. Introduction

In the last twenty years, scholarly communication has undergone changes involving digital technology that have caused its socioeconomic norms to be revised. These changes are documented in numerous publications that clarify the mechanisms whereby the scholarly publication subsector has been forced to restructure under the pressure of new design, production, distribution, and promotion methods.[201] The implementation of Open Access to scholarly information and new Open Science policies being put in place are the main factors involved in the transformations we are witnessing.[202] They are modifying how research content is distributed and disseminated to scholarly communities and to society in general.

At the heart of these changes we find social media, which today represents one of the most visible aspects of the transformation of digital scholarly communication, mainly due to its widespread adoption by communities of researchers.[203] Social media 'refers to a set of services allowing the development of conversations and social interactions on the Internet or in a mobile situation'.[204] Structured on digital platforms,

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[201] C. Boukacem-Zeghmouri, 'Nouveaux intermédiaires de l'information: nouvelles logiques de captation de la valeur', *Information, Document, Données*, 4(52) (2015), 34-35.

[202] P. Suber, *Open Access* (Cambridge, MA: The MIT Press, 2012); Ministère de l'Enseignement supérieur de la Recherche et de l'Innovation (MESRI), *Plan national pour la science ouverte* (Paris: MESRI, 2018).

[203] D. Nicholas and others, 'New Ways of Building, Showcasing, and Measuring Scholarly Reputation', *Learned Publishing*, 28(3) (2015), 169-83; S. Vignier, M. Joly, and C. Okret-Manville, *Réseaux sociaux de la recherche et open access. Perception des chercheurs: étude exploratoire* (Grenoble: Consortium Couperin, 2014).

[204] MédiasSociaux, 'En 2018 peut-on comprendre ce que sont les réseaux sociaux?', *Médias Sociaux*, 1 September 2018.

these media offer collaborative functionalities that allow groups and even whole communities to come together.

These platforms, born on the web, have gained a foothold in a world that is foreign to them, that of scholarly research and publication. They have arrived with their own norms and values, and are contributing to reshaping the research landscape. This is why they have been the focus of considerable research work in recent years, analyzing their use and role in the media-based circulation of the content they host on their platforms. However, it is interesting to note that no questions of ethics have been raised. And it is even more interesting to explore why social media have been spared these questions.

Léo Coutellec defines ethics in an original way, positioning it as a reflexive axis between scholarly integrity, which he considers as a process pointing inward toward the community, and social responsibility, which he presents as a process pointing outward toward society.[205] His approach allows him to offer a clear, articulate definition that corresponds to the issues dealt with in this chapter and also meets the objectives of the work in which it is included:

> At a minimum, it is possible to qualify research ethics (RE) as an introspective process on the values and goals of scholarly research; scholarly integrity (SI) as a normative process that aims to frame the (good) practices of a community by establishing standards and principles; the social responsibility of science (SRS) as a political process, which aims to understand the context and anticipate the

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[205] L. Coutellec, 'Penser l'indissociabilité de l'éthique de la recherche, de l'intégrité scientifique et de la responsabilité sociale des sciences: Clarification conceptuelle, propositions épistémologiques', *Revue d'anthropologie des connaissances*, 13(2) (2019), 381-98.

consequences of science in an awareness of its actively involved character.[206]

Léo Coutellec's approach therefore commits us to raising the question of ethics in order to fully grasp the nature of the issues at stake in the changes caused by the arrival of social media in research and scholarly publication. Consequently, our research question becomes the angle from which we wish to address our subject: do the changes in scholarly publication caused by the emergence of social media call research ethics into question? Are they redefining these ethics in the light of their own regulations, which are adopted by researchers? Finally, do they entail a risk for the validity of the knowledge produced?

It is therefore from this angle that we focus our interest on the emergence of social media in the world of scholarly publication. Building on work carried out since 2015 concerning the observation and analysis of changes in scholarly communication, we will explore the ethical issues associated with the emergence of a new category in the field of research and scholarly publication and with the new rules they introduce.

This body of work, funded first by the European Commission and then by the Publishing Research Consortium, enabled us to create an observatory of the scholarly communication practices of young researchers on digital platforms. The panel of researchers observed was made up of 116 people from seven countries (China, France, Spain, United States, Poland, United Kingdom, Malaysia). Semistructured interviews were conducted with this cohort over three years (2016–2019), in order to understand and analyze their practices, but more specifically the changes in these practices with regard to the context in which they were rooted. Based on the daily and situated practice of researchers, this longitudinal dimension reveals the contemporary norms

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[206] Coutellec, 'Penser l'indissociabilité', p. 381.

of scholarly communication, in which social media plays an important role. This approach is interesting because it makes it possible to account for the role of social media in terms of both the externalities and the internalities of science in the making.[207]

2. Once upon a time in 2008...

Twitter and Facebook, the true success stories of the social and collaborative web, have also affected the academic world. Numerous studies have shown that scholarly communities have been far from oblivious to the allure of social media.[208] However, the practice remained limited to certain individuals, and was not widely adopted by a community.

Connotea was the first academic social media launched by a scholarly publisher, *Nature*, which wanted its digital platform to include a collaborative dimension intended to bring an audience together.[209] After a few years of life—more precisely, of experimentation— Connotea was retired in 2006.

From 2008 on, it was possible to observe real enthusiasm for academic social media take hold among researchers. This 'new wave' was driven by young PhDs who had grown up using the web, who knew and used mainstream social media (such as Facebook), but who had also played video games online. These representatives of the young 'digital' generation did not necessarily plan for an academic career and preferred to take the path of start-ups and innovation. They were, however, going

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[207] H. Nowotny, P. Scott, and M. Gibbons, *Re-Thinking Science. Knowledge and the Public in an Age of Uncertainty* (Cambridge, UK: Polity Press, 2001).

[208] R. Van Noorden, 'Online Collaboration: Scientists and the Social Network', *Nature*, 512 (2014), 126-29; J.-L. Ortega, 'Disciplinary Differences in the Use of Academic Social Networking Sites', *Online Information Review*, 39(4) (2015), 520-36.

[209] Wikipedia, 'Connotea', (2019).

to position themselves in the universe they knew best, the world of research, to offer new and innovative services based on digital capabilities. These services targeted a niche market: everyday research work.

Mendeley is undoubtedly the most iconic example of this phenomenon. The two PhD students behind this social media platform said that they dreamed of having bibliographic reference management software that would allow them to share—in the same way as on Facebook—the references that they had entered in their own library. That was how Mendeley first appeared in 2008: it offered shared, collaborative reference management, which could now be done within a group where the division of labor was organized. Mendeley has been what can only be described as a dazzling success.[210] In just a few years, this collaborative platform was adopted by millions of researchers, delighted to feel understood by their 'colleagues'.

The date of appearance of these new players in the scholarly information value chain, who positioned themselves as real intermediaries, is not trivial. It corresponds to the subprime-related global economic crisis when growth had slowed significantly and the search for solutions to revitalize the global economy drew extensively on the help of digital models.

It is therefore no coincidence that countless academic social media platforms wanting to capture a particular domain in the cycle of research and scholarly communication emerged around this time. These social media platforms established themselves as new intermediaries, infiltrating scholarly communities, traditional players in scholarly communication (publishers, university presses, etc.), search engines (Google, Google Scholar), and bibliometric databases (Web of Science, Scopus, Dimensions) alike.

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[210] 'New Media Top 10 | Top 100', *The Guardian,* 2021.

This positioning is based on the risk and innovation strategies specific to the players in the social media hive. They do not produce content, like traditional players, but instead promote content posted or 'contributed' by users. They offer many features dedicated to interaction, which, in turn, is valued by platforms seeking to develop their own value.[211] This dimension is essential, because the search for a sustainable economic model allowing academic social media to survive in the landscape, and more specifically in the scholarly publication market, depends on it.

The proliferation of these platforms can be explained by their targeting of one or more activities in the research workflow.[212] We can observe how they take root in available spaces of a researcher's design and/or communication activities, so much so that it has led publishers to question the future of their roles.[213]

Now that they themselves have become topics of research and analysis, the platforms are being examined primarily on the basis of their impact on researcher communities and the ways in which researchers use them, according to their different disciplines.[214] Their functionalities and metrics are analyzed as they evolve.[215]

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[211] Boukacem-Zeghmouri, 'Nouveaux intermédiaires de l'information'.

[212] Y. Campfens, 'Market Research Report: What Has Become of New Entrants in Research Workflow and Scholarly Communication?', *Open Science Framework,* 2019.

[213] P. Smart, 'Are Publishers Failing as a Service Industry?', *Learned Publishing*, 29(3) (2016), 143-44.

[214] Collectif, 'Les réseaux sociaux numériques de chercheurs en SHS. Proposé par Elifsu Sabuncu et Antoine Blanchard, animé par Nicolas de Lavergne et Olivier Le Deuff', in *THATCamp Paris 2012: Non-actes de la non-conférence des humanités numériques*, ed. by. Collectif (Paris: Éditions de la Maison des Sciences de l'Homme, 2012); M. Thelwall and K. Kousha, 'ResearchGate: Disseminating, Communicating, and Measuring Scholarship?', *Journal of the Association for Information Science and Technology*, 66(5) (2015), 876-89; Nicholas and others, 'New Ways of Building'; M. Thelwall and K. Kousha,

3. Platform values versus academic values

The legitimizing rhetoric mobilized by academic social media is grounded in the discourse markers of Open Access and Open Science. Information sharing, content accessibility, visibility, and search engine optimization (because they are well indexed by the Google search engine) are all arguments put forward to convince potential users of their value in the Open Access landscape.[216] They position themselves as a researcher's partners in the arena of academic competition, helping with the quest for reputation, visibility, and social recognition.[217] The slogans feature the conventional buzzwords again and again: impact, excellence, visibility, recognition, etc.

The socioeconomic analysis of their strategies based on openness and the collaborative paradigm shows positions that differ but converge on the reconciliation of two value systems.[218] First, we see the academic and symbolic values relating to the world of research and to the editorial model that places the publisher at the center of the process of promoting scholarly publication. Secondly, there are the media values relating to

'ResearchGate articles: Age, Discipline, Audience Size, and Impact', *Journal of the Association for Information Science and Technology,* 68(2) (2017), 468-79; Van Noorden, 'Online Collaboration'; Ortega, 'Disciplinary Differences'; W. Yan and others, 'How Does Scholarly Use of Academic Social Networking Sites Differ by Academic Discipline? A Case Study Using ResearchGate', *Information Processing and Management*, 58(1) (2021), Article 102430.

[215] D. Nicholas, D. Clark, and E. Herman, 'ResearchGate: Reputation Uncovered', *Learned Publishing*, 29(3) (2016), 173-82.

[216] G. Chartron, 'Stratégie, politique et reformulation de l'*open access*', *Revue française des sciences de l'information et de la communication*, 8 (2016).

[217] E. Orduna-Malea and others, 'Do ResearchGate Scores Create Ghost Academic Reputations?', *Scientometrics*, 112(1) (2017), 443-60.

[218] P. Bouquillion and J. T. Matthews, *Le Web collaboratif: mutations des industries de la culture et de la communication* (Grenoble: Presses universitaires de Grenoble, 2010).

digital platforms, which place the user—the researcher—at the heart of value creation. They therefore contribute to establishing the rule of 'Get Visible or Vanish' rather than 'Publish or Perish'.[219] Although academic social media platforms try to establish harmony between academic values and media values, this does not necessarily translate into equivalence. This is reflected in the ambiguities of their strategies and of the practices of the researchers who use them.

Far from neutralizing each other, the two value systems are working together to enable the platforms to conquer larger and larger audiences, which they will use to secure new investment. This approach is essential if they want to last and to consolidate their standing in the digital scholarly publication market.

At a time when scholarly publication is dominated by publishers forming technological conglomerates, academic social media is in fact one of the strategies for undertaking takeovers, mergers, or partnerships. The publishers' strategies are currently less focused on content producers than on operators of collaboration and sharing platforms. The acquisition of Mendeley in 2013 by the publisher Elsevier was the first step in this direction.[220] The trend has continued over the years with the takeover of other academic social media platforms; the scholarly publication sector is therefore now predicated on the entanglement of content producers (users, researchers) and platform owners.

4. The blind spot of changing scholarly communication

In any process of change, the reference points tend to become blurred. This phenomenon can also be found in the transformation of

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[219] J. Doyle and M. Cuthill, 'Does "Get Visible or Vanish" Herald the End of "Publish or Perish"?', *Higher Education Research and Development*, 34 (3) (2015), 671-74.

[220] Elsevier, 'Elsevier Acquires Mendeley, an Innovative, Cloud-Based Research Management and Social Collaboration Platform', *Elsevier*, 9 April 2013.

scholarly communication toward the digital sphere and Open Access. Academic social media have made full use of this context of blurred reference points to consolidate their monetized value, even if this is detrimental to the ethics of scholarly publication, which these days is based on the free dissemination of knowledge.

The first point is their Open Access rhetoric, which allows them to appeal to researchers to 'deposit' their publications on a given platform. These deposits are essential for increasing the critical mass of content that enters into their value-creation mechanisms. Academic social media therefore do not hesitate to use the same terminology as open archives and research infrastructures to encourage researchers to deposit their content. The enticements to deposit are so repetitive and systematic that researchers do not hesitate to describe them as spam.

However, uploading a document to a platform such as Academia or ResearchGate does not have the same benefits as archiving (or depositing) that same document in an open archive. The latter provides access to scholarly documents without any restrictions or barriers to access. Likewise, it guarantees long-term access to this content, thanks to its role as a research infrastructure. In the case of academic social media, on the other hand, you must have an account to be able to access content on the platform. Yet the number of such accounts created is an integral part of increasing the value of academic social media.

The work we conducted showed that the researchers we interviewed created accounts on academic social media platforms specifically to access articles.[221] This obligation to create an account does not correspond to either the principles or the spirit of Open Access. It also creates confusion for researchers between what is offered on a platform like Academia or ResearchGate and on an open archive like HAL

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[221] D. Nicholas and others, 'Where and How Early Career Researchers Find Scholarly Information', *Learned Publishing*, 30(1) (2017), 19-29.

(*Hyper Article en Ligne*, the French national multidisciplinary research archive).[222]

Over the four years when we observed researchers' practices, those related to academic social media are undoubtedly the ones that underwent the most significant development. More and more researchers now have accounts on different social media platforms and they are developing more substantial, richer practices using the platforms' functionalities. These practices basically have two objectives.

The first is to seek contacts for collaboration. This is particularly true before a conference, where researchers know that they will have the opportunity to meet specialists; following a person on social media enables them to create a first level of proximity. The second objective is to acquire visibility for their publications and CV. The documents available on the platform will be indexed by Google Scholar and a detailed profile will be accessible to peers who are also on the platform. Aware that they will be 'googled' by recruitment or project evaluation panels, the early career researchers explained that they were careful to update and scrupulously enrich what has become much more than merely a personal page: it is also a showcase of their network of contacts, the scope of their interactions, etc. This showcase reflects researchers' status, which they can now display and cultivate.[223]

Another point, which is never addressed in debates about academic social media, is that, while there are many platforms, few of them last longer than four or five years. Some of those launched in 2008–2009 have completely disappeared. The question therefore arises of the future of the content on such platforms. Is the content just deleted along with the platform? Is there an archiving procedure? This essential aspect is seldom addressed and not always very clearly.

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[222] Vignier, Joly, and Okret-Manville, *Réseaux sociaux*; Nicholas and others, 'Where and How'.

[223] Nicholas and others, 'New Ways of Building'.

5. Researchgate, the perfect example of the ethical risks for scholarly publication

The example of ResearchGate is particularly useful for highlighting the ethical issues raised by the transformation of the world of scholarly publication. Launched in 2008 by Ijad Madisch, ResearchGate is not based in Silicon Valley like most other platforms, but in Berlin. Its claim to fame is that it offers a 'Facebook for researchers', adapted to their needs.[224]

5.1 The success story from Berlin

The success of ResearchGate is undeniable, and since 2010, the platform has offered scores to reflect researchers' 'impact'. The more articles a researcher submits and the more they interact with their network of contacts (by asking or answering questions), the higher their score. The method of calculating the ResearchGate score is opaque and has been the subject of research attempting to 'crack' the algorithm.[225] It turns out that the score reflects both the researcher's symbolic recognition, conveyed by their publications and citations, and their social recognition or status, reflected in the number of downloads, followers, etc.[226]

The ResearchGate score, now known as the 'RG Score', has established itself as a new indicator, adding to the criticism of the traditional citation indicators (Impact Factor or h-index) and to the new field of altmetrics, which explores the production and use of alternative

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[224] I. Madisch, 'ResearchGATE Scientific Network: A First Step towards Science 2.0', *Clinical and Experimental Immunology*, 154 (2008), 214.

[225] S. Copiello, 'Research Interest: Another Undisclosed (and Redundant) Algorithm by ResearchGate', *Scientometrics*, 120 (2019), 351-60.

[226] Nicholas, Clark, and Herman, 'ResearchGate'; D. Nicholas, E. Herman, and D. Clark, 'Scholarly Reputation Building—How Does ResearchGate Fare?', *International Journal of Knowledge Content Development and Technology*, 6(2) (2016), 67-92.

indicators.[227] Altmetrics are themselves a form of media and they are capable of driving the circulation of scholarly content on web platforms. In certain fields, such as medicine, the RG Score is so successful that researchers have incorporated it into their CV.[228] In so-called emerging countries (e.g. Malaysia), researchers are presented at conferences with reference to their RG Scores. ResearchGate has capitalized on this success and has gained an ever-increasing number of users.

One of the negative consequences of this phenomenon is that the RG Score has become a goal in itself. While open archives struggle to convince researchers to deposit their publications and thus contribute to the construction of Open Access, researchers choose to upload their publications on academic social media platforms instead. Researchers are highly motivated to gain visibility for their work, particularly among their network of followers, and thus to increase their scores. And in most cases, they are convinced that they are participating in Open Access since the platforms present arguments encouraging this belief.

5.2 The time for legal action

ResearchGate has been so successful that it has consistently refused all takeover offers. It remains based in Berlin and has accepted investments from Bill Gates (the Bill and Melinda Gates Foundation) and Goldman Sachs amounting to tens of millions of dollars.[229] From 2013–2014 onward, ResearchGate has become a flagship German start-up, and Ijad Madisch has been officially congratulated by Angela Merkel.

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[227] J. Priem, 'Altmetrics', in *Beyond Bibliometrics: Harnessing Multidimensional Indicators of Scholarly Impact*, ed. by B., Cronin and C. R. Sugimoto (Cambridge, MA: The MIT Press, 2014), pp. 263-87.

[228] A. Bouchard, '#DeleteAcademicSocialNetworks? Les réseaux sociaux académiques en 2016', *UrfistInfo,* 30 August 2016.

[229] S. Shead, 'Goldman Sachs and Bill Gates Quietly Invested $52 Million in a Social Network for Scientists', *Business Insider*, 28 February 2017.

This success is not lost on the International Association of Scientific, Technical, and Medical Publishers (STM), which notes that the content available on ResearchGate is essentially composed of articles published in their journals. What ResearchGate monetizes is therefore based on the value of the scholarly content that STM members publish. The top player in international scholarly publishing, Elsevier, has therefore formed a kind of coalition, which asked ResearchGate to withdraw the articles that are the property of the publishers, because copyright was transferred from the authors to the publishers at the time of publication.[230] Because ResearchGate failed to respond, the coalition appealed to the German courts in Berlin and launched a lawsuit. ResearchGate was therefore obliged to remove 1.7 million articles that had previously been circulating on the platform—and hence shared—illegally according to the coalition and copyright laws.[231]

After this decision was announced in the media, no immediate impact was detected on the number of users of ResearchGate or on their activity. ResearchGate limited its action to inserting into its upload functions a message reminding researchers of the need to check the Open Access policy of the journal in which their article had been published, in order to verify which version of the content could be posted elsewhere and over what time period. Once again, we are back to the conflation of open archives and academic social media; this confusion contributes to the blurring of policies in researchers' minds, and of the boundaries between the different players in scholarly publication and their roles and responsibilities.

The main interest of the trial against ResearchGate is that it has enabled unprecedented debate about the new forms and new directions

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[230] R. Van Noorden, 'Publishers Threaten to Remove Millions of Papers from ResearchGate', *Nature News,* 10 October 2017.

[231] D. Singh Chawla, 'Publishers Take ResearchGate to Court, Alleging Massive Copyright Infringement', *Science Magazine,* 6 October 2017.

taken by the scholarly publication sector, with the arrival of new players and intermediaries on the web. The ethical dimension of ResearchGate's strategies, barely sketched out until then, was subjected to new scrutiny because of this episode. These strategies are at last taken into account in debates in the scholarly publishing profession, but also in scholarly discussions of analyses of developments in scholarly communication.

5.3 The time for partnerships

SpringerNature, the number 2 player in scholarly publishing, has chosen a different value capture path: a partnership. SpringerNature stated that it would prefer to engage in discussions with ResearchGate, because it explicitly recognized the important place the latter now occupies in the ecosystem of tools used by researchers. SpringerNature is therefore embarking on a partnership with ResearchGate, from which it wishes to learn more about researchers' practices, activities, and networks of contacts. SpringerNature also believes that it can learn a lot from ResearchGate's expertise in collaborative features. After several months of discussions, a pilot study was initiated by the two players around a corpus of articles owned by SpringerNature.

The pilot study has recently been published and reports on the observation of practices related to this corpus and points out the improvements and services that can be developed for easier access to the version of record, while respecting copyright.[232] ResearchGate has therefore served as an observatory of 'discoverability', which is defined in the scholarly publishing industry as the user experience associated with the consumption of content. However, nothing was said about the data passed on by ResearchGate to SpringerNature. The issue of personal data, owned by researchers, was not addressed either, even

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[232] E. Hawkins and others, 'Researchers at the Centre: Content Discoverability, Visibility, and Access. An Evaluation of the Content Syndication Partnership between Springer Nature and ResearchGate', *SpringerNature.com,* September 2020.

though the platform is subject to the European data protection regulation. ResearchGate's silence and lack of transparency on this important issue highlight the importance of the continued existence of the ethical guardians of scholarly publication.

In this partnership scenario, ResearchGate has succeeded in legitimizing its role as an academic social media platform on the scholarly publishing scene. However, the market's unprecedented provisions and its new regulations have revealed a void that the original definition of ethics of scholarly publication does not address. The rules of ethics, which first became blurred, now seem to have been almost deactivated: designed as they were for a known model, they are now obsolete, or at the very least unsuitable, faced with a reality that has shape-shifted.

6. Conclusion

Academic social media now forms an integral part of the scholarly publishing world. Having grasped the nature of the needs of research communities, these players responded with digital platforms equipped with sharing and interactive features, presented as a contribution to the Open Access movement. The Open Access movement has therefore undergone a kind of reconfiguration, which served the platforms' development and monetization strategies. This has not been without consequences for the way in which researchers understand and practice Open Access today. Those who understand this phenomenon are leaving the platforms, which they believe have betrayed the spirit and ethics of Open Access. The announcements of Elsevier's takeover of Mendeley in 2013 and SSRN (Social Science Research Network) in 2016 upset the online scholarly community, some of whom chose to leave the platforms and close their accounts.[233]

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[233] Bouchard, '#DeleteAcademicSocialNetworks?'.

As a corollary, and diametrically opposed to the principles of Open Science, the example of ResearchGate shows that academic social media can introduce—or exacerbate—media strategies that direct researchers' actions toward the objective of increasing their scores. The citation impact is no longer enough, it must be extended by a media impact.[234] This leads researchers to become detached from their scholarly field, or from their institution, to the benefit of social media platforms, even to the point of handing over their personal data, which can then be monetized. Social media therefore becomes a vicious circle that encourages researchers to engage with the platforms, interact with them, and feed them new content as often as possible, in order to demonstrate their participation with the goal of media audience and status.

The ethical issues of academic social media coincide with the broader issues of 'science platformization', which affect both the externalities and the internalities of scholarly communication.[235] Their nature incorporates the complexity of digital regulations and norms that intersect with the field of scholarly publication. They deserve to join the debate presented in this book, in order to restore its importance and intelligibility.

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[235] Nowotny, Scott, and Gibbons, *Re-Thinking Science.*

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