Mastering the Publication Process to Promote Your Scientific Career

Advanced PhD Course notes
Participant manuscript

20.11.2015
CUSO session

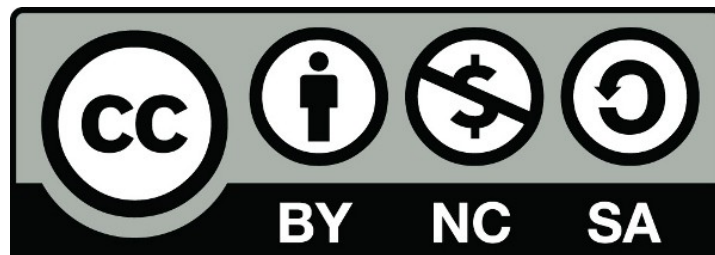**Thomas Henkel, Université de Fribourg**

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Output for the participant

The adage "publish or perish" is no longer up to date. The explosion of the number of scientific publications leads to difficulties in finding relevant information and problems in the visibility of publications written by young researchers. New modes of publication of scientific information are on the rise.

Researchers today need to select different strategies for their professional careers, or the position of their laboratory and/or institution, or scientific ethics, elements that are sometimes contradictory.

This workshop seeks to open the question of new modes of publication on digital media, in term of writing modalities, but also in term of new scientific and business models. What is possible today? Where are the limits?

The workshop will help the doctoral candidate to ask the right questions about publications, in order to make conscious choices that correspond to his/her personal goals.

At the end of the workshop, participant:

- Can perform thoughtful choices for publication in order to enhance their scientific career

- Knows how to apply Open Access policies of the Swiss and/or European funding agencies

- Better understands issues of Open Scientific Information issues: Open Access, Open Research Data, Post-reviewing, Creative Commons.

Seminar program

9h00	9h05	**Welcome**	Welcome and Seminar program
9h10	9h30	**Assessement**	Expectations Icebraker
9h30	10h00	**1. Scientific publication business**	What's up?
10h00	10h15	**Break**	
10h15	11h30	**2. Scientific publication trends**	What's up?
11h30	12h15	**3. Discerning choices for scientific publication** Group work 45' preparation	Group 1 **How to choose a journal?** Group 2 **What about publication of data sets, data papers and/or negative results?** Group 3 **Who should be author?** Group 4 **How to comply with OA and copyright?**
12h15	13h15	**Lunch**	
13h15	15h15	**3. Discerning choices for scientific publication**	**Discerning choices for scientific publication** Groups 1-4 10' presentation 15'discussion 5' final trainer conclusion
15h15	15h30	**Break**	
15h	15h45	**Summaries**	4 posters are produced by participants 15' preparation 5' presentation
15h45	16h00	**4. Impact and ethical issues of scholar publication**	Trainer final conclusion
16h00	16h30	**Personal work**	Work with the **steps check-list** for your next **publication**. Ask your personal questions
16h30	17h00	**Assessment**	Seminar evaluation, check expectations

1. Scientific publication business

What's up?

9h30	10h15	45'

Section objectives

1	The participant is made aware of **how money flows** between academics and publishers	
2	The participant understands that subscription based journals are relying on **copyrigtht transfer** and that **authors retains copyright** in most **gold open access journals**	
3	The participant knows to apply open access policies funding agency policies with **Green** or **Gold Roads**	

Business of publishing Science Technical and Medical (STM) journals

In the 1960s and 1970s, commercial publishers began to selectively acquire "top-quality" journals which were previously published by nonprofit academic societies. Recently, merging also occurred

2004 Informa bought by Taylor & Francis

2005 Masson bought by Elsevier

2006 Blackwell (dummies collection) bought by Wiley

2009 CRC Press bought by Taylor & Francis

2014 Nature Publishing Group bought by Springer

So the scientific publishing market is dominated by the so-called 'big four' companies that comprise around 30% to 40% of the world's total scholarly peer-reviewed journals, which number is about 40'000 journals titles according to Ulrichsweb, an online directory of scholarly journals:
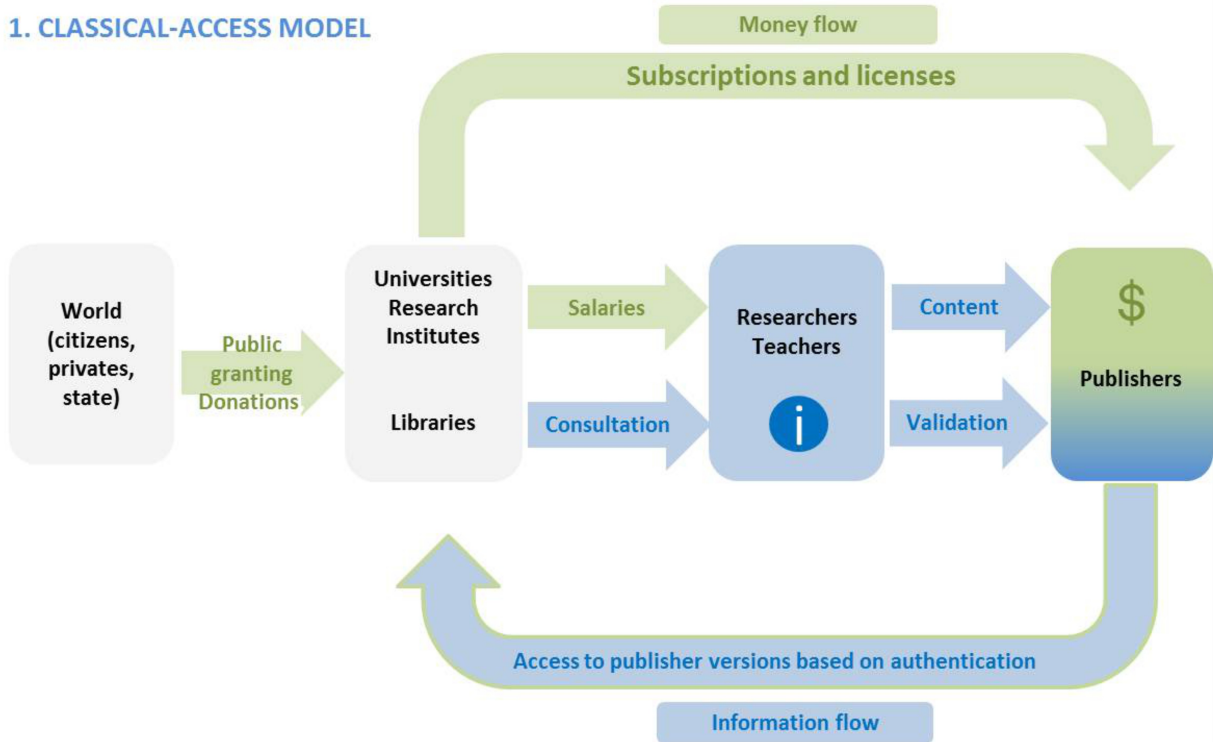
Springer Science and Business Media has about 3'000 journals

Reed Elsevier has about 3'000 journals

Wiley & Sons has about 2'300 journals

Taylor & Francis has about 2'100 journals

There follows an enormous number of smaller publishers.

STM journal publishing is business with turnover estimated to be 9 to 12 billion $ annually. Business was mainly built so far on the copyright transfer to the publisher, resulting in need of subscription to access information. Now, the new publishing gold-Open Access (OA) business model is rapidly increasing: Springer owns Biomed Central, one the biggest biomedical gold-OA group of journals, that is a direct competitor to the independent PlosOne gold-OA biomedical journal. Springer recently bought Nature Publishing Group (NPG), who just started to issue Nature Communication gold-OA journal, direct competitor of Science Advances launched in 2014 by AAAS publisher. In gold-OA model, author is charged 50 to 6000 $ to publish article, but any user can access freely the article. This Author Processing Charge (APC) per article could also be a good business for publishers, since pure electronic journals could publish an "infinite" number of articles, with special internet platform allowing some of automatic and faster reviewing of articles.

The income of scientific publishers comes from tax payers for subscription based gold-OA journals (**Figure 1**). Both subscription and gold journals may have an infinity of business models that can be classified in several categories: subscription-based journals, delayed-, gold-, and hybrid OA journals (**Table 1**).

1. CLASSICAL-ACCESS MODEL

Money flow

Subscriptions and licenses

World (citizens, privates, state)

Public granting Donations

Universities Research Institutes

Libraries

Salaries

Consultation

Researchers Teachers
ⓘ

Content

Validation

$ Publishers

Access to publisher versions based on authentication

Information flow

2. GOLD OPEN-ACCESS MODEL

Money flow

Article Publication Charges (APC)

World (citizens, privates, state)

Public granting Donations

Universities Research Institutes

Salaries

Consultation

Researchers Teachers
ⓘ

Content

Validation

$ Publishers

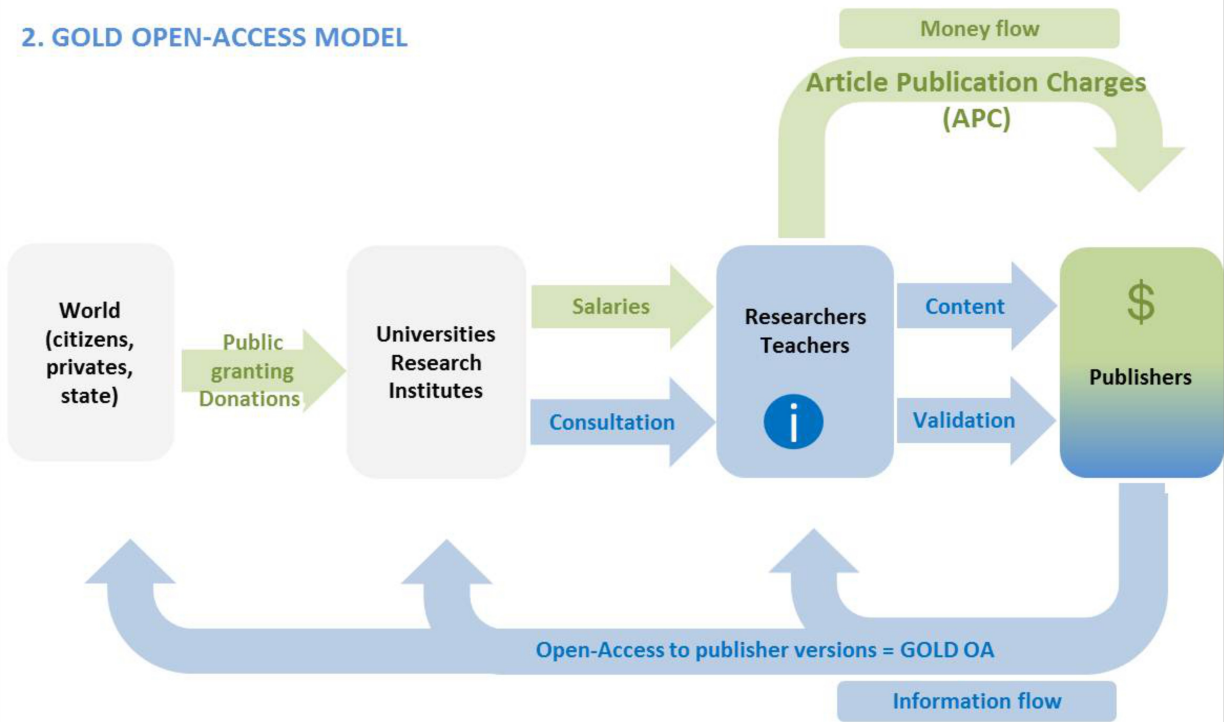**Open-Access to publisher versions = GOLD OA**

Information flow

Figure 1 Subscriptions and gold-Open Access journals

Table 1 Main categories of business publication models

Journal category	Business model	
Subscription based	and/or	- Online latest issues and/or back files are paid by scholar libraries (site licenses, with IP or shibboleth identification)
		- Single user pays for one article (Pay-per-View) (average 40$ per article)
		- Personal subscription for online access journal
		- Subscription for online access journal only on dedicated local computer(s)
		- Subscription for online access journal on local computer(s) restricted to community only
Delayed-OA	and/or	- Online latest issues paid by scholar libraries (site licenses) with IP recognition or shibboleth identification
		After a period of time, back files become open access on publisher website
		- Single user pays for the latest article (Pay-per-View) (average 40$ per article)
		- Personal subscription to latest issues of online journal
Gold-OA	and	- The author (or laboratory and/or library and/or institutional research office and/or public research funder) pays to publish, allowing immediate access to the publisher version on the journal website (50 to 6000 $ per article)
		(- The author pays extra fee for CC-BY license)
		(- The author pays for possible self-archiving of publisher version manuscript)
Hybrid-OA	and/or	- The business model is still based on subscription journal paid by libraries but authors may choose Author Publishing Charges (APCs) to allow immediate OA of their article.
		- Single user pays for one article (Pay-per-View) (average 40$ per article) - Personal subscription to the journal
		Hybrid-journals ask supplementary charges to make an article accessible for free. This practice is called "double dipping", because the publisher receives extra money whereas the prize for the journal subscription remains the same.

2. Scientific publication trends

What's up?

10h30	11h30	60'

Section objectives

1	The participant is aware that scientific publication is more and more driven by **funding agencies** compliance	1
2	The participant is aware of surrounding emerging tools around scientific articles (**researcher ID**, **social media**, **open and post-reviewing**)	2

2.1 Definition of Open Access

"Open-access (OA) literature is digital, online, free of charge, and free of most copyright and licensing restrictions. What makes it possible is the internet and the consent of the author or copyright-holder."[1]

There are several degree of Open Access journals. The Guide How Open is the journal? Open Access Spectrum[2] summaries the situation very well:

Access	Reader Rights	Reuse Rights	Copyrights	Author Posting Rights	Automatic Posting	Machine Readability	Access
OPEN ACCESS	Free readership rights to all articles immediately upon publication	Generous reuse & remixing rights (e.g., CC BY license)	Author holds copyright with no restrictions	Author may post any version to any repository or website	Journals make copies of articles automatically available in trusted third-party repositories (e.g., PubMed Central) immediately upon publication	Article full text, metadata, citations, & data, including supplementary data, provided in community machine-readable standard formats through a community standard API or protocol	OPEN ACCESS
	Free readership rights to all articles after an embargo of no more than 6 months	Reuse, remixing, & further building upon the work subject to certain restrictions & conditions (e.g., CC BY-NC & CC BY-SA licenses)	Author holds copyright, with some restrictions on author reuse of published version	Author may post final version of the peer-reviewed manuscript ("postprint") to any repository or website	Journals make copies of articles automatically available in trusted third-party repositories (e.g., PubMed Central) within 6 months	Article full text, metadata, citations, & data, including supplementary data, may be crawled or accessed through a community standard API or protocol	
	Free readership rights to all articles after an embargo greater than 6 months	Reuse (no remixing or further building upon the work) subject to certain restrictions and conditions (e.g., CC BY-ND license)	Publisher holds copyright, with some allowances for author and reader reuse of published version	Author may post final version of the peer-reviewed manuscript ("postprint") to certain repositories or websites	Journals make copies of articles automatically available in trusted third-party repositories (e.g., PubMed Central) within 12 months	Article full text, metadata, & citations may be crawled or accessed without special permission or registration	
	Free and immediate readership rights to some, but not all, articles (including "hybrid" models)	—	Publisher holds copyright, with some allowances for author reuse of published version	Author may post submitted version/draft of final work ("preprint") to certain repositories or websites	—	Article full text, metadata, & citations may be crawled or accessed with permission	
CLOSED ACCESS	Subscription, membership, pay-per-view, or other fees required to read all articles	No reuse rights beyond fair use/ limitations & exceptions to copyright (all rights reserved copyright) to read	Publisher holds copyright, with no author reuse of published version beyond fair use	Author may not deposit any versions to repositories or websites	No automatic posting in third-party repositories	Article full text & metadata not available in machine-readable format	CLOSED ACCESS

"HowOpenIsIt?"™ Open Access spectrum", © 2013 SPARC and PLOS, licensed under CC BY

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[1] Source: Peter Suber's (2004) Very brief introduction to Open Access. On http://legacy.earlham.edu/~peters/fos/brief.htm, [accessed 27.03.215]

[2] Source: CC-BY: SPARC and Plos Guide of Open Access spectrum (2013). On http://www.plos.org/wp-content/uploads/2012/10/PAS_English_web.pdf [accessed 27.03.2015]

2.1 Funding agencies OA policies or guidelines

"He who pays the piper calls the tune" is also valuable in the research business (yes, it's a business!). Funding agencies are no exceptions. Besides their influence on research by accepting or declining projects, funding agencies have nowadays guidelines about how research results must be made accessible. Convinced that freely available publications promote the forthcoming of research, and aware of the fact that the money accorded to research projects is paid by public institutions, most funding agencies urge that results of the founded projects project are published under Open Access (OA) conditions permitting free and unlimited access for everyone. Some persons claim that free and unlimited access to research result should enhance its visibility and accelerate the dissemination of knowledge. OA should also improve the transparency of research and make plagiarism detectable earlier. Moreover it is regarded by fervent partisans as the right solution to resolve the problem of still increasing prizes of scholarly journals that make them unaffordable for many libraries, called "Serial Crisis".

Whether they are partisans of Open Access or not, researchers funded by public agencies should know about OA guidelines and policies before they decide where and how to publish their works.

Journals can be more open or less open, but their degree of openness is intrinsically independent from their impact, quality of peer review, prestige, peer review methodology, sustainability, and article quality. Sub-scription based journals, delayed-OA, hybrid-OA and even gold-OA journals may or may not allow self-archiving; the publisher decides which type of manuscript (reminder in **Table 2**) can be self-archived in case of copyright transfer, for examples

- publisher version for free or with a fee

- pre-referee and/or post referee version with or without an embargo period.

Sherpa/Romeo (http://www.sherpa.ac.uk/romeo) helps authors to identify the Open Access compliance of scholarly journals and publishers if they want to follow the Green Road of Open Access (Self-Archiving the article after publication). The DOAJ (Directory of Open Access Journals, www.doaj.org) lists the Open Access Journals where the articles are freely downloadable (Gold Road). These "gold" journals ask generally an author's processing charge (APC) for the publication of accepted articles ranging from 100 to 6000 USD.

Publisher of gold-OA journals can still retain full copyright, despite of free access for users. In reality, even gold-OA self-archiving is not always possible, meaning that diffusion rights and reuse of published content still remain in publisher hands. Be careful: gold journals do not have necessarily Creative Commons licenses!

Table 2 Different types of manuscripts of peer-reviewed articles

Pre-referee version	Article before reviewing of peers (= so called pre-print by publishers)
Accepted version	Accepted final peer-reviewed article without publisher layout (= so called post-print by publishers or also post-referee)
Publisher version	Final peer-reviewed manuscript with publisher layout (= so called post-print by some publishers), under copyright of publisher or under non-exclusive right of diffusion by publisher because of a Creative Commons license
CC-BY-NC publisher version	Final peer-reviewed manuscript that should not further be used for commercial purpose providing that original paternity is cited
CC-BY publisher version	Final peer-reviewed manuscript that is freely reusable providing that original paternity is cited

Swiss National Science Foundation (SNSF)

See http://www.snf.ch/en/theSNSF/research-policies/open-access/Pages/default.aspx

Journal articles and books that result from funded projects must be accessible according to Green or Gold Road principles. Green OA can be realized with pre- and post-prints manuscripts. The latter must be accessible within 6 months after their publication. By 31 December 2016, the costs of publication (called author processing charges, APCs) in a Gold Open Access journal with an academically acknowledged level of quality can be claimed from the agreed project funding, up to a limit of CHF 3000 per publication. Hybrid

Open Access is tolerated but not funded. Book publications resulting from funded projects must be freely available within 24 months after publication. Publication grants for books are possible, even if they are not related to a funded project.

Horizon 2020

See http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf

Peer reviewed publications related to the funded projects must be published Open Access. Green Open Access must be fulfilled within 6 months for biomedical, natural and exact sciences, and 12 months in the social sciences and humanities. Gold and hybrid Open Access journals are allowed but both publication types must be deposit in an OA-repository. During the duration of the project, APCs are eligible for reimbursement. This applies also for books. The use of the Creative Commons Licenses and of unique identifiers such as ORCID is recommended. If a funded project is part of the *Open Research Data Pilot,* the research data has to be deposit into a research data repository that is accessible for third parties. Information about tools and instruments for result validation should also be provided. Free access to the tools and instruments themselves is recommended.

Major funding agencies adopted OA guidelines and policies (**Table 3**).

Table 3 Some funding agencies policies or guidelines for Open-Access

NIH US	Obligation for Gold or Green Roads within 6 months; No application = funding cutting
Horizon 2020	Obligation for Gold or Green Roads within 6 months
SNSF Switzerland	Obligation for Gold or Green Road swithin 6 months
Denmark	100% Open Access in 2022. Strong recommendation for Green Road
UK Wellcome Trust	Obligation for Gold or Green Roads within 12 months
China	Recommendation for Gold or Green Roads within 12 months
Bill and Melinda Gates Foundation	Target: 100% Open Access in 2017. Gold Road only *and* CC-BY license

2.2 OA and monographs

Especially in the humanities, publications in printed book form have still great value for scientific communities. In this field of knowledge, the obligation to publish Open Access books encountered and still encounters lot of resistance by researchers, and publishers, especially by those who limit their business to print books that are completely formatted and corrected by the authors themselves. In this later case, Open Access is clearly a threat to their business.

There are different ways to publish books book and to comply with OA book policy by SNSF:

- Authors can publish an online book nearly for free by formatting, correcting manuscript and checking Copyright compliance themselves, and deposit it in an institutional or subject repository, allowing immediate Open Access.

- Authors can publish an online and/or printed book on self-publishing platform to be sold to readers. But caution should be observed in this case, because the author bears all economic risk and the publisher or platform owner none. After 24 months, an Open Access version of the book should be available in an institutional or subject repository

- Authors can choose a publisher with a real formatting and correction manuscript service for the publication of online and/or printed book to be sold to readers. This is why the SNSF now offers special funding for this type of book publication. After 24 months, an Open Access version of the book should be available in an institutional or subject repository. As the publisher has economic interests in selling books, promotion of the publications and its authors is provided.

- Authors can choose a publisher with a real formatting and correction manuscript service for the publication of a free online book for reader and printed book to be sold to him (hybrid model). This is why the SNSF now offers special funding for this type of book publication. As the publisher has economic interests in selling books, promotion of the document and authors is provided.

In this latter case, this is a gold-OA business model of monograph publication. APCs have to be paid by authors, themselves relying on SNSF special funding. As a consequence, the publisher has to be chosen carefully. There are traditional or renowned publishers with OA series and new publishers with new offers; but gold-OA book publishers can be simply predatory, trying to make immediate money with APCs, without real formatting and correcting service, or simply trying to increase their scientific portfolio titles to increase their renown. By the way this could also be the case with a non OA book publisher.

Although the SNSF may fund the publication of monographic theses, authors must first comply with the guidelines of their institutions. An OA publication of the theses after its publication by a publisher is often not possible. On the other way, a publisher probably will decline the publication of a thesis already accessible in a repository. If a publisher contacts the author of an already accessible thesis, it is probably a predatory publisher. Thus it is important to know first the guidelines and to look then for a solution that is acceptable for the institution and for the publisher before publishing or depositing the thesis in a repository.

2.3 Predatory OA journals

There not only pitfalls in the choice of a publisher for books (Open Access or not). Similar problems exist in the choice of publishers of so called predatory Open Access journals. They accept articles without control (even nonsense articles), inform about article fees only after paper acceptance, give misleading information about editorial board and impact factor, and aggressively campaign for article submission. Therefore, besides use of Sherpa/Romeo and DOAJ tools, the use of Beall's list of Predatory Open Access journals (http://scholarlyoa.com/publishers) may provide good completion information to avoid predatory journals, together with careful use of bibliometrics information about a journal.

2.4 Mega-journals

Mega-journals[3] are issued from OA movement. They are changing scholarly communication which was for a long time dominated by specialization: every field of research had its own specialized journals. Mega-journals such as PLOS one (http://www.plosone.org) have a wide scope and publish a lot of articles that are not selected regarding a special research field or originality of results for putative scientific impact. Peer review examines only the technical quality of an article. The importance of these OA journals resides in their huge number of published articles. Their business structure is relatively simple in comparison to publishers with hundreds or thousands of journals they have to manage. As mega-journals are only interested in technical quality they encourage interdisciplinary research and allow the readers to decide on the importance of an article. Because of this interdisciplinary and the free access to the articles, mega-journals can finally also increase the impact of scholarly publications. On the other side, mega-journals are criticized for the huge number of published articles (10 to 40'000 per year) that contributes to infobesity. Some big publishers use mega-journals to publish articles rejected by their top level subscription journals. In this case, the publisher profits from the already done peer review and the large number of APCs paid for the publication in the Mega-journal.

2.5 Open Research Data (ORD)

As stated in the Horizon 2020 Open Access policy, research data should also be made publicly available. Advantages are transparency and reproducibility of the research, visibility of the work done by researchers, and possible reuse of the data for other purposes. Researchers who want to or have to make their research data available should think about how to realize ORD at the early stage of design experiment. Data have to be intelligible for others, authors of the data records must be named, etc. For further information see http://opencontext.org/about/publishing.

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3 See Claire Creaser: The rise of mega-journal. School of Business and Economics. Research Blog, 5.5.2014 (http://blog.lboro.ac.uk/sbe/centre-for-information-management/the-rise-of-the-mega-journal)

2.6 Researcher ID: Thomson Reuters ResearcherID, ORCID

In the time of search engines and automatic data mining it is not only difficult to find all articles written by a certain John Smith. But machines have problems to identify persons with common names. Different bibliographic styles use different name formats, so it is difficult to identify the author even by humans. "J. Smith" is just too ambiguous! To solve this problem, Thomson Reuters proposed in 2008 the unique ResearcherID (www.researcherid.com). ResearcherID is a free unique Identifier for researchers that resolves the ambiguity problems and is readable by machines. ResearcherID facilitates the automatic look up for publication written by the same person and is directly linked to Thomson Reuters Products such as Web of Science. As the Researcher ID is a proprietary product its success was not tremendous, event it was a good idea.

This is why in 2012 ORCID (Open Researcher and Contributor ID, www.orcid.org) was launched. ORCID is a nonproprietary unique identifier for researchers. Many institutions are member of ORCID and the Swiss universities will follow soon. ORCID is just at the beginning of its success and the number of European researchers with ORCID will overwhelm the Americans in the next months.

- ORCID has the form of an URI (e.g. http://orcid.org/0000-0001-5882-6823) that makes it very easy to use.

- ORCID is designed as an interface to link researchers, publishers, search tools, and ORD repositories.

- The researcher decides on the publicly accessible information about him on profile.

- It is possible to import automatically bibliography citations from other databases (e.g. Web of Science, Scopus), and to link ORCID to an existing other ResearcherID (Thomson and/or Scopus)

- Researchers can also link ORCID to institutions, facilitating bibliometrics and/or altmetrics for universities ranking.

- When a researcher changes institution, no need to change the ORCID. Researcher just updates his ORCID profile.

- According to an Editorial in Nature (Credit where credit is due, Nature 464, p. 825, 17 December 2009, doi:10.1038/462825a), unique identifiers for researchers will make it easy to identify also « minor » research contributions (e.g. drafts, blog posts, wikipedia entries).

2.7 Bibliometrics and Altmetrics

Bibliometrics is not only a highly controversial tool to evaluate researchers and universities. Used with skill and caution, bibliometrics is very useful to identify hot topics, so important for researchers and journals. Researchers should not only observe the development of their own bibliographic indicators, but they can use bibliometric information to develop their publication strategy. For example, Impact Factor (IF) of journal mentioned in the JCR (Journal Citation Report, part of Web of Science) helps to identify important journals in a certain field of knowledge.

Classic bibliometrics normally analyzes only traditional scientific publications, especially (peer reviewed) journal articles. New communication channels like blogs, social media platforms, etc. are not taken into account. Altmetrics tries to fill this gap by analyzing citations of scientific publications on the Internet, but also views and downloads. Altmetrics is interesting for observing reactions produced by publications (usage, discussion, controversies, highlights). It also permits to have a look beyond the borders of the academic world to identify what research is discussed and where in press media, political and citizen groups. Less intended as a tool for quality measurement Altmetrics helps also to identify persons who post-review publications.

Different projects and companies are computing altmetrics: Altmetric (http://www.altmetric.com), ImpactStory (https://impactstory.org), Plum Analytics (http://www.plumanalytics.com). There are also publishers who are adding altmetrics to their published articles (e.g. PLOS one: http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0119470). Altmetric proposes an

interesting bookmarklet (http://www.altmetric.com/bookmarklet.php) that is able to indicate altmetrics for the currently viewed article.

2.8 New tendencies in peer review

Whereas biblio- and altmetrics are quantitative approaches to scientific publication evaluation that are mostly reliable on a macro level, peer review is the qualitative approach that is more meaningful in single cases. Unfortunately classic peer review has also its deficits: it is expensive in money (at least for the publisher) and time, less and less people like to do review work because it is not rewarded by the scientific community, and it can be very subjective (if done by the "old boys"). These are maybe some of the reasons why computed bibliometrics and altmetrics gains nowadays importance over careful review quality of publications for scientific impact of a researcher or institution.

Today, different form of peer-review co-exists as attempts to improve peer-review system:

- In the double-blind review the identity of the author(s) is unknown to the reviewer and vice versa. But in small research areas, the reviewer can identify the author by his approach, methods and style even if his name is not known.

- Post publication peer review is a practiced in the social sciences and the humanities at least as of the 18th century for books (e.g. Göttingische gelehrte Anzeigen first published in 1739). In this case, reviews written by different peers are published in different journals after the publication of the book.

- Since the beginning of the 21st century, post publication reviews are used by some scientific journals that should be in fact called comments. There are online platforms for reviewing and discussing academic publications like Publons (https://publons.com), PubPeer (https://pubpeer.com), Journal review (https://www.journalreview.org), or PubmedCommons (http://www.ncbi.nlm.nih.gov/pubmedcommons). Different models of post-review platforms exist: everybody can leave a comment or only peers (e.g. only researchers with indexed articles in Pubmed can leave comments on PubmedCommons); comments are signed or anonymized (PubPeers). PubPeers anonymized comments are under controversy: a reputation can be heavily damaged if allegations are not true, because of rapid spreading on the Internet. On the other hand, PubPeers allows simple students to address validity concerns about a publication of a famous professor.

- Some of Journal websites offer comments options

- An alternative to traditional peer review is the open peer review.[4] The referee reports are normally only visible to the editor and the author. In the open peer review, the report and the author's answers are published with the article. This makes the review process more transparent and the scientific community can take advantages from published comments. Furthermore, review work is credited as it is the case in the humanities and social sciences where reviews are considered as publication types.

- Some publishers use even multiple peer review types. E. g. F1000 (Faculty of 1000: www.f1000.com) has several services: In F1000Prime, about 1000 acknowledged researchers rate the articles which results in a mixture of peer review (only peers are rating) and bibliometrics (the number of positive ratings). F1000Research is an Open Access Journal with post publication peer review.

2.9 Social Media

Review platforms offer chance to discuss research by Internet. Discussions also take place in social networks, where it is possible to exchange full text of publication also. Beside LinkedIn (www.linkedin.com), which is a social network for professionals, there are also platforms dedicated for researchers like

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4 See Eva Amsen: What is open peer review, 21.5.2014 (http://blog.f1000research.com/2014/05/21/what-is-open-peer-review).

ResearchGate (www.researchgate.net) where researchers can maintain their profile page and contact colleagues (like Facebook friends) and exchange papers. Academia.edu (www.academia.edu) is ReserchGate competitor that emphasizes more repository aspect, whereas Mendeley (www.mendeley.com) belonging to Elsevier, is a reference management system that integrated social network. Presence on these platforms may boost the notoriety of researchers in certain circles.

But one must be aware that although being Open Access for researchers, these platforms are not Open Access for the public without any account, .as it is the case for Academia.edu. As a consequence, altmetrics cannot take into account information on these platforms for its calculations, since it is not publicly accessible. In consequence, researchers have to carefully choose where they want to be active. They should not only publish on social platforms own by profit companies, but also on personal websites, subject and institutional repositories that can be crawled by altmetrics computers.

3. Discerning choices for scientific publication

Group 1 How to choose a journal?

Group 2 What about publication of data sets, data papers and/or negative results?

Group 3 Who should be author?

Group 4 How to comply with OA and copyright?

11h30	15h15	2h45

Section objectives

1	The participant takes into account **indexation** of the journal by search tools, publisher **embargo period**, **IF value**, and **access** to journal	
2	The participant is aware of new types of publications, ie **Open Research Data** sets, **data papers** and **negative results**	
3	The participant makes a clear difference between **authors** who share responsibilities for any paper they co-author, **acknowledges** individuals who have partially contributed to the study, **cites** datasets, and details author contributions	
4	The participant applies **SNSF OA policy**, and uses **institutional** and/or **disciplinary Open Access repositories** for self-archiving besides personal website or social media	

Group 1 How to choose a journal? [Findability]

Study case

Professor David Horisbergers advised his PhD Colin to publish in **Alzheimer's & Dementia (Elsevier)** his new method for Alzheimer disease study in rats, originally developed for Huntington disease study.

- Before answering him, the student considers other publication possibilities;
- He prepared a table as a base of discussion with his professor;
- He thinks that 2 other journal candidates could be selected amongst 7 that he pre-selected;
- His project thesis was financed by SNSF.

Target

Explain to particpant why Colin selected *Nature communications* and *Plos One* journals!

Timing

- Preparation in group **45'**
- Presentation by one delegate **10'**
- Discussion raised by one delegate **15'**

Presentation assignments

Slide 1
Presentation of the case

Online demos
Show participants how to find Alzheimer's & Dementia (Elsevier) journal information about**:**

- How to find embargo period and publication model with Romeo/Sherpa Publisher Copyright policies & Self-Archiving and journal website
- How to find if a journal is indexed by WoS and what is IF of that journal with the Journal of citation report (JCR)
- How to know if a journal is indexed by most important domain search tool (here Pubmed)

Slide 2
- ○ Show participants to completed table
- ○ Explain red criteria Colin rejection
- ○ explain why Colin considers that Alzheimer's & Dementia (Elsevier) is not so good choice for publication

Discussion assignments

Key questions to raise to audience are:

- Is it better to choose a journal that is indexed by WoS?
- Is it better to choose multidisciplinary or specialized journals?
- Is it better to choose a subscription based-journals or a Gold-OA journal?
- Is it better to choose a subscription based journal with high IF or Gold-OA journal with lower IF to get more cited?

	Audience	Originality	Findability	Prestige	Ethics	OA compliance
	↓	↓	↓	↓	↓	↓
Journal?	**Domain?**	**Chances?**	**Search tool indexation?**	**WoS IF?**	**Hybrid journal?**	**Self-archiving Embargo period?**
Nature (Springer)	Multidisciplinary	**Low**	Pubmed: yes WoS: yes Scopus: yes Google scholar : yes	42.5	Subscription based	Post referee 6 months
Nature Methods (Springer)		**Low**	Pubmed: yes WoS: yes Scopus: yes Google Scholar: yes	25	Subscription based	Post referee 6 months
Nature communications (Springer)*		Possible	Pubmed: yes WoS: yes Scopus: yes Google Scholar: yes	10.7	Gold OA	Publisher pdf None
Methods (Elsevier)		Possible	Pubmed: **no** WoS: yes Scopus: yes Google Scholar: yes	3.2	Subscription based	**Accepted manuscript 12 to 48 months**
Plos One (PloS)*		Possible	Pubmed: yes WoS: yes Scopus: yes Google Scholar: yes	3.5	Gold OA	Publisher pdf None
Alzheimer's disease research journal (Nova)	Specialized	Possible	Pubmed: **no** WoS: **no** Scopus: yes Google Scholar: yes	n/a	Subscription based	Accepted manuscript None
Alzheimer's & Dementia (Elsevier)		Possible	Pubmed: yes WoS: **....................** Scopus: yes Google Scholar: yes	....	**....................**	**....................**

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Group 2 How to publish data sets, data papers, and negative results?
[Validity, reproducibility]

Study case

Matthew are about to finish the financed period of his thesis. His thesis supervisor tells him to write his thesis. He has only have only negative results after 3 years of work. Matthew motivation to write his PhD thesis is very low. He has been told that a PhD student should publish peer-reviewed articles to later continue his academic career or find a good position in industry. In fact, he is depressed.

Matthew has 3 different types of dataset of negative results, leading to the conclusion that there is no metabolization of atrazine herbicide in Arabidopsis thaliana.

- There is no metabolization of atrazine by GSTs in *Arabidopsis thaliana*
- There is no metabolization of atrazine by benzoxazinones in *Arabidopsis thaliana.*
- There is no vacuolar encapsulation of atrazine in *Arabidopsis thaliana*

Each category of experimentation was replicated 3 times, and once reproduced by other team members of another laboratory.

Target

Explain participants how Matthew could publish his results to gain publication experience and to ensure a good further career?

Timing

- Preparation in group **45'**
- Presentation by one delegate **10'**
- Discussion raised by one delegate **15'**
-

Presentation assignments

Slide 1
Presentation of the case

Demos

- Show participants Dryad, Zenodo, Figshare, Open Data Pilot Elsevier and Qualitative data Repository.
- How are they called?

Slide 2
- Explain participant what are data papers and data journals? Show one
- What could be advantage of publication of negative results in PloSOne collection of negative results compared to a dedicated journal of negative results such as Journal of negative results in biomedicine?

Slide 3
- With one scheme, explain one possible publication strategy for Matthew

Slide 4
How to cite a dataset?
How to cite a datapaper?

Discussion assignments

Key questions to raise to audience are:

- What kind of ORD repositories to select: multidisciplinary or subject?
- Who is funding the ORD repository?
- Why to publish datasets and to show raw and calculated data?
- What are advantages and problems of publication negative results for science based on the reading of Fighting publication bias: introducing the Negative Results section and Publication bias, A Journal Editor's Perspective on Publishing Negative Results

Ressources

See Re3Data.org repository for ORD selection
See Data journals by Foster for data journal selection

Group 3 Who should be author?
[Work contribution and content responsibility]

Study case

PhD **Marie Schuller** is writing an article on pro-biotics supplementation

- She is writing the article together with **John Imrak** a post-doc student located abroad. They both processed Marie's data.
- She generated her own data published as dataset with DOI, but combined them with previous non-published older data of a former lab PhD, **Stefan Aragno**.
- Marie designed the experiment, together with **Marc Hindermülle**, statistician.
- **Paul Vinze** is Marie Schuller's Professor (h-index of 32) that raised the project funding money. He read the article when the writing of Marie and John was finished, and was very happy of the work and conclusions, allowing Marie to submit the article to a journal. Prof. Vinze has 2 other SNSF projects, and his chair is funded by Nestlé and Roche.
- Marie Schuller was a part of a SNSF (n°17422).

Target

Explain why Marie chose the first configuration of authorship, data citation, acknowledgment, author contributions and declaration of conflict of interest.

Timing

- Preparation in group **45'**
- Presentation by one delegate **10'**
- Discussion raised by one delegate **15'**

Presentation assignments

Slide 1

- Display the study case to allow course participant to read it

Slide 2

- **What is authorship?**
  Uni Fri [Directives concernant la procédure en cas de soupçon de comportement scientifique incorrect](#)
  Epfl [EPFL Directive concerning research integrity LEX 3.3.2 and good scientific practice at EPFL](#)
  Unil [Plagiat et respect de l'intégrité](#)
  UniGe [Intégrité dans la recherche scientifique](#)
  UniNe: uses the [Qualité d'auteur des publications scientifiques](#) 2013-2014 from Swiss Academy of Arts and Sciences

- **What is authorship abuse?**

  [Fruit-fly paper has 1,000 authors](#)
  [Prof Margaritondo 722 peer-reviewed publications](#)
  [The White Bull effect: abusive coauthorship and publication parasitism](#)

- **What are ackowledgement and authzor contribution ?**

  [It is time for full disclosure of author contributions cAMP-Signalling Regulates Gametocyte-Infected Erythrocyte Deformability Required for Malaria Parasite Transmission](#) (see Aknowledgments and Contributions work sections)
  [Human vascular model with defined stimulation medium – a characterization study](#) (see author notes)

Slide 3

- Show Marie's table
- Explain why 2 configurations should be really excluded
- Explain Marie's choice

Discussion assignments

Key questions to raise to audience are:

- Who can be author: Bachelor, Master, or PhD student, professor, post-doc, lab technician, statistician, data handling person, responsible person of the funded project?
- Has the author's place a meaning?
- In case of non-authentic results, fraud, plagiarism or misconduct: are all authors responsible of the content, or only last the author, and/or laboratories and institutions?

	1st author	2nd author	Last author	Data set citation	Acknowledgment	Author contributions	Declaration of conflict of interest
1	Marie Schüller	n/a	John Imrak	Marie Schuller data set Stefan Aragno data set (Marie convicted him to publish his dataset)	Marc Hindermülle for experimental design Prof Paul Vinze for support	Conceived and designed the experiments: MS, JI. Performed the experiments: MS. Analyzed the data: MS, JI. Wrote the paper: MS, JI	Prof Paul Vinze chair funded by Nestlé and roche
2	Marie Schüller	John Imrak	**Paul Vinze**	Marie Schuller data set Stefan Aragno data set (Marie convicted him to publish his dataset)	Marc Hindermülle for experimental design Prof Paul Vinze for support	Conceived and designed the experiments …………………… Performed the experiments …………………… Analyzed the data …………………… Wrote the paper ………………………	Prof Paul Vinze chair funded by Nestlé and roche
3	Marie Schüller	John Imrak	**Paul Vinze**	Marie Schuller dataset	Stefan Aragno for his unpublished data that were mixed with mine to form the cited dataset, with his consent. Marc Hindermülle for experimental design Prof Paul Vinze for support	Conceived and designed the experiments …………………… Performed the experiments …………………… Analyzed the data …………………… Wrote the paper ………………………	Prof Paul Vinze chair funded by Nestlé and roche
4	Marie Schüller	John Imrak	**Paul Vinze**	**Marie Schuller dataset**	Marc Hindermülle for experimental design Prof Paul Vinze for support	n/a	Prof Paul Vinze chair funded by Nestlé and roche
5	Marie Schüller	John Imrak	**Paul Vinze**	**Marie Schuller dataset**	**n/a**	**n/**a	**n/a**

Group 4 How to comply with Open Access and copyright? [Access and diffusion rights]

Study Case
You are given 5 articles and corresponding self-archiving full texts.

Target
Complete the chart and find the 2 best self-archiving practices, for copyright and OA compliances

Timing

- Preparation in group **45'**
- Presentation by one delegate **10'**
- Discussion raised by one delegate **15'**

Presentation assignments

Slide 1

- Display the table study case to allow course participant to read it

Demos

- Show participant how to find open access funding agency SNSF, NIH, and Horizon 2020 policies

Slide 2

- Show completed table and comment each cell also by opening the links
- Show the participants how to prepare an article for self-archiving. What are key elements?

Discussion assignments

Key questions to raise to audience are:

- Are funding agency Open Access policy and publisher Copyright compatible?
- Explain participants what are consequences of no compliance of Copyright and funding agency Open Access policy based on following articles

  NIH Public access policy

  Funders punish Open Access dodgers

  Elsevier Takedown Notices for Faculty Articles on UC Sites

- What other main consequence can you imagine?

Article (work without VPN)	Journal business model	Open archive Type of full text?	Social media Type of full text?	Copyright compliance?	OA SNSF compliance?
Magrelli, Silvia et al. Social orienting of children with autism to facial expressions and speech: a study with a wearable eye-tracker in naturalistic settings. **Frontiers in Psychology** 4, p. 840 (2013)	Gold OA	Archives ouvertes Genève	Linked-in: Reference only	....	....
Frederic Mery and Tadeusz J. Kawecki. A Cost of Long-Term Memory in Drosophila. **Science** 308 (5725): 1148 (2005)	Subscription based	Rerodoc Fr	None	....	....
Neyen, Claudine; Bretscher, Andrew J.; Binggeli, Olivier; Lemaitre, Bruno. Methods to study Drosophila immunity. **Methods** 68 (1): 116-128 (2014)	Hybrid	Infoscience	Research Gate	....	....
Müller L, et al. A new exposure system to evaluate the toxicity of (scooter) exhaust emissions in lung cells in vitro. **Environmental Science Technology** 44(7):2632-38 (2010).	Subscription based	Boris	Research Gate	....	....
Hameri et al. Production Flow Analysis - cases from manufacturing and service industry. **International Journal of Production Economi c**s 129(2) pp. 233-241. (2011)	Hybrid	Serval	Research Gate	....	....

4. Impact and ethical issues of scholar publication

Impact and ethical issues behind research article!

15h45	16h	15'

Section objective

1	The participant is made aware that behind each article sections ie introduction, material and methods, results, discussion, authorships etc, there are **ethical and impact issues of publication**	
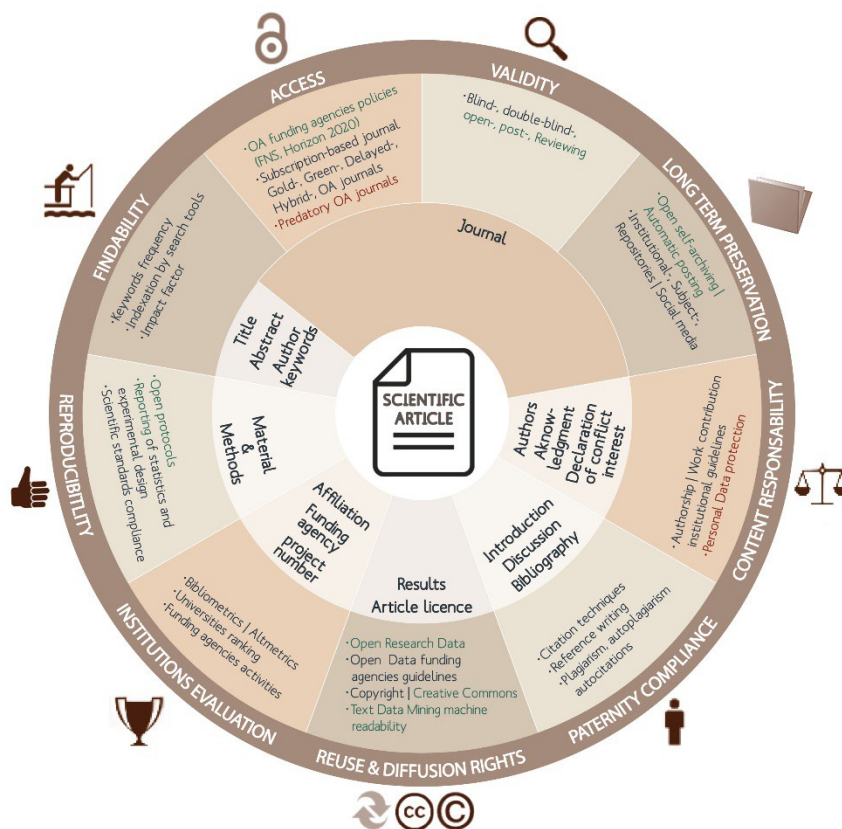
Figure 2 2015 Impact & Ethical issues of scholar publication. CC- BY Scientific Information School (SIS)
http://dx.doi.org/10.6084/m9.figshare.1454474

Follow publication issues, pitfalls and controversies!

Vetterli on Twitter may allow researchers to update on trends, issues, and pitfalls of Open Science.

Scholarly Open Access: a critical analysis of scholarly publishing (Jeffrey Beall, librarian)

It is not a junk (Michael Eisen, co-founder of Plos One, biologist)

Scholarly kitchen: what's hot and cooking in scholarly publication (Society for Scholarly Publishing)

Open and Shut (Richard Poydner journalist)

Retraction Watch (Adam Marcus and Yvan Oransky, scientific editors)

Check-list -overview of publication steps

Before project	The project leader includes Gold-OA funding's and writes a data research management (DRM) plan to funding agency [not done by PhD, but by PI when submitting project]	
Journal selection before writing	The PhD avoids **hybrid journals**, as recommended by SNSF , or favors subscription based journals allowing **Green-OA within 6 months** to comply with SNSF OA policy	
	The PhD take into account **IF** value, **indexation** of journal by search tool, **OA-conditions**, **CC** license, **ORD** compatibility and avoids **predatory journals**	
Before publisher signature	The PhD signs agreement with the publisher for the **re-use of the article** in his PhD if necessary	
	The PhD select a publisher compatible with his OA-thesis, if a **monograph** version is to be published	
After signature and during writings	The PhD writes **affiliation** according to institutional guidelines for easy University bibliometrics [not treated in this course. To be checked with PI]	
	The PhD prepares **research data**: anonymization, metadata, compatibility format, and selection of ORD repository with help of DRM plan [not treated in this course. To be done with PI]	
	The PhD chooses carefully **keywords** in title, abstract, and author keywords to enhance findability by search tools [not treated in this course]	
	The PhD avoids **auto-plagiarism numerous auto-citations** and citations to please supervisor and/or, editor and/or publisher**,** and avoids **secondary citations** if not necessary [PhD beginners course]	
	The PhD complies with check-lists for best **reporting** of experimental design, protocols, and statistics in supplementary material, material and methods or in **data paper linked** to published **datasets**, allowing reader to rapidly detect putative **bias**, and to ease **reproducibility**	
	The PhD writes **agency funding agency or sponsor name,** project number, and make a clear **declaration of conflict** interest to allow reader to evaluate putative bias	
	The PhD makes difference between **authors** who share responsibilities of the paper and **acknowledges** individuals who contributed partially to the study. **Author contribution** may clarify respective author work to the paper, as well as **dataset citations.**	
During evaluation process	The PhD stays up-to-date on a specific question effortlessly thanks to **emails, RSS alerts** and group bibliographies alerts [PhD beginners course]	
	The PhD follows online **reviewing process**: pre-print-, open-, blind-, double blind reviewing) [not treated in this course]	
	The PhD keeps carefully the **accepted manuscript** for further Green-OA compliance	
After publication	The PhD self-archives Gold and subscription based articles in **institutional** and/or **disciplinary OA repositories** (+ embedded mark for article type of manuscript + DOI to original publication)	
	The PhD reuses **publisher version of articles for the thesis** (+ embedded mark publisher authorization of reuse if necessary + DOI to original publication)	
	The PhD updates his personal reference list on **ORCID,** and/or Thomson Researcher ID, Scopus Researcher ID	
	The PhD follows publication comments from "**post-reviewing"** sources (journal, dedicated websites, search tools, and social media Academia, Research Gate, Linked-in, Twitter.	