INCREASE THE VISIBILITY AND IMPACT OF A SCIENTIFIC PUBLICATION BY MASTERING COPYRIGHT
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* Janelise Favre¹ and Tania Germond²

ABSTRACT

The quality, dissemination and quotation of publications leave a lasting mark on the reputation of a researcher. When an author publishes, he/she has the exclusive right to decide when and how his/her work will be disclosed and used. A good knowledge of the principles of copyright and methods of disclosure allows researchers to increase the visibility and thus the impact of their publications.

KEYWORDS

Copyright - scientific work - publication - Open Access - Creative Commons - h-index

August 2018 and updated in September 2020

We thank Mrs. Cécile Lebrand, PhD (Open Science advocate and information specialist), University Medical Library at the CHUV for her valuable advice.

* In alphabetical order

1 Attorney-at-law – Partner at Archipel – Geneva – Switzerland
2 Legal Counsel – Member of the Bar – PACTT (Technology Transfer Office of the University of Lausanne (UNIL) and the University Hospital of Lausanne (CHUV)) – Switzerland
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1. INTRODUCTION

Research and innovation are the building blocks of an ever-changing society. Creativity is supported by our laws and in particular by the rules on the protection of intellectual property which encourage researchers to share their knowledge while knowing how to protect themselves.

Intellectual property is divided into two areas: industrial property (patents, trademarks, designs, etc.) and copyright.

As soon as an author publishes, he generates a work, he creates value that is protected by copyright law.

All too often, researchers simply play a passive role in protecting and promoting their copyrights.

As publication is one of the important forms of scientific capital, authors should be familiar with the basic concepts of copyright.

The purpose of this article is to make researchers aware of the content and value of their copyright.

The first part of this article is devoted to the work, to the author and to his protection. We will explain in particular what is meant by scientific work and in what cases it is protected. A case study is presented to allow researchers to better understand the concept of the protected work.

The second part of this article deals with the publication of the work. We will examine the two dissemination methods: the publishing agreement and the Open Access publication. We will give some tips to authors to increase the quote rates of their articles and thus their h-index.

2. THE WORK: ITS CREATION AND ITS PROTECTION

2.1. WHAT IS MEANT BY WORK?

By work, we mean any creation of the mind, literary or artistic, which has an individual character.

From this definition, two important criteria stand out: the “creation of the mind” and the “individual character”.

Creation of the mind implies that the work must be based on human activity; it must be the expression of a manifestation of thought. Objects that are created without human intervention are not works. Thus, products of nature or technology created independently of an intellectual activity of the human being are not works.

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3 The use of the masculine gender has been adopted to facilitate reading and has no discriminatory intent.
4 Article 2 para. 1 CopA
5 Dispatch of the Federal Council relating to the Federal Act on Copyright and Related Rights (Copyright Act, CopA), FF 1989 III p. 506
6 DENIS BARRELET / WILLI EGLOFF, Le nouveau droit d'auteur, Staempfli 2008, p. 11
It is important that the pre-existing elements are modified by the intervention of the author\(^7\). Accordingly, the products of nature or technique are not works. It is not necessary that the activity of the mind be important; a very modest activity is enough\(^8\). The quality of creation does not matter: whether it is prodigious or mediocre, the creation of the mind can be protected by copyright\(^9\). Nevertheless, the work must lead to the creation of something new, which is different from what already exists\(^10\).

Article 2 para. 2 of the Swiss Copyright Act (CopA) specifies that scientific works are creations of the mind.

The work must then take on an individual character. According to case law, individuality is one of the fundamental characteristics of a protected work\(^11\). Individuality is distinguished from banality or routine work; it results from the diversity of the decisions taken by the author, from surprising and unusual combinations, so that it seems impossible that a third party confronted with this same task could have created an identical work\(^12\).

The individual character of a work does not depend on the history of the work, especially the financial or intellectual efforts that led to it\(^13\). Indeed, the work is to be judged by itself, independently of the circumstances surrounding its creation\(^14\).

The protection of a work under copyright is given regardless of its form (manuscript, PDF version or other forms)\(^15\).

Note that computer programs (software) are also considered works\(^16\). It may seem odd that computer programs are protected by copyright. For want of a better alternative, the Swiss legislator has considered software to be “industrial creations” protected by copyright law\(^17\).

It should also be noted that the copyright law was partially revised in April 2020. A consequent change was made with regard to photographs. Indeed, the notion of work is now extended to photographs and to images obtained by a process similar to photography even if they are not individual\(^17\text{bis}\). Thus, copyright protection is recognized for all photographs, regardless of their individual character or the qualification of the photographer, but also for all productions obtained by a process similar to photography. This last clarification implies that henceforth, photographs obtained by transmission imaging techniques (in particular X-rays and infrared rays) as well as microcopies, macrocopies and reproductions of negatives are de facto protected by copyright.

\(^7\) CHRISTOPHE CARON, Droit d’auteur et droits voisins, 5ème édition, LexisNexis 2017, p. 61

\(^8\) DENIS BARRELET / WILLI EGLOFF, Le nouveau droit d’auteur, Staempfli 2008, p. 11

\(^9\) ATF 105 II 297

\(^10\) VINCENT SALVADÉ, Droit d’auteur et technologies de l’information et de la communication, quid iuris, 2015, p. 4

\(^11\) ATF 113 II 306

\(^12\) ATF 136 III 225

\(^13\) ATF 130 III 714

\(^14\) Dispatch of the Federal Council relating to the Federal Act on Copyright and Related Rights (Copyright Act, CopA), FF 1989 III p. 506

\(^15\) RETO HILTY/ MATTHIAS SEEMANN, Open Access – L’accès aux publications scientifiques dans le droit suisse, Novembre 2009, p. 18

\(^16\) Article 2 para. 3 CopA

\(^17\) FRANÇOIS DESSEMONTET, CR LDA, article 2, p. 37

\(^{17\text{bis}}\) Article 2 para 3\(^\text{bis}\) CopA
2.2. WHAT IS A SCIENTIFIC WORK?

Scientific work, unlike scientific discovery, enjoys the protection of copyright, as long as it demonstrates a minimum of creative effort.

The individual character of scientific works lies less in the content of the work - which is highly dependent on scientific logic - than in its concrete linguistic or stylistic form, the formulation and structuring of its content.\(^{18}\)

In a 1987 judgment examining scientific work, the Federal Court began by specifying what does not constitute a scientific work protected by copyright:

“The content of what a researcher declares about facts, events and circumstances comes into the public domain as soon as it is published; even if it is new knowledge or acquired through labor, it does not enjoy the protection of copyright. The result of the activities of a researcher is freely usable, which is in line with the purpose of scientific research, which is oriented towards free access to ideas and knowledge.”\(^{19}\)

The Federal Court recalls here the principle of the freedom of discovery, of opinion and of the scientific idea.

To discover is not to create. Indeed, the content of a scientific discovery is not the work of the researcher’s mind, but the communication of facts hitherto unknown or little known.\(^{20}\) The principle of freedom of scientific discovery in copyright law is justified in the interest of scientific research. Scientific discovery and the results that arise from it cannot be protected by copyright, as the criteria of creation of the mind and individuality are not met.

To illustrate this point, the activity of an archaeologist speaks for itself. Indeed, an archaeologist will not be the author of his discoveries, even if his activity implies a solid know-how, a lot of knowledge and a huge effort.\(^{21}\) Indeed, the archaeologist does not create anything new. He discovers things that already exist. Nevertheless, if the archaeologist writes an article about his discoveries and if he respects the criterion of individuality, then his article will be protected by copyright.

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18 RETO HILTY/ MATTHIAS SEEMANN, Open Access – L’accès aux publications scientifiques dans le droit suisse, Novembre 2009, p. 18
19 ATF 113 II 306, JdT 1988 I 304 (trans.)
This same judgment explains what constitutes a work protected by copyright in scientific works:

“On the other hand, the specific form of a scientific work can be protected by copyright. In the first place, its external form deserves this protection when it is clearly distinguished from the writings of others relative to the same subject. Obviously, the author of a scientific work has little room to maneuver, since he must stick to certain precise facts and use the jargon of his field, if he wants to be understood and taken seriously. When the room for maneuver leaves no possibility of individual or original phrasing, because the content dictates the terms of the communication, there is also no room for copyright protection. Apart from its external form, a scientific work may have its own character because of its layout, the choice and selection of subjects or their arrangement; in this case it enjoys the protection of copyright.”

The Federal Court recalls here that the specific form of a scientific work can be protected by copyright. Its external form deserves protection when it is distinguished from the writings of others related to the same subject. By external form, we mean the characteristics that stand out. It may be the structure of the presentation, its substance, the choice of topics, wording, writing, descriptions, etc.

Finally, this case law explains under which conditions the copyright of a scientific work may be infringed on:

“When it comes to scientific work, the rights of the author can be harmed if a third party reproduces the specific form or follows in its fundamental characteristics. It must be borne in mind, however, that the form of the work can not be protected if it is required for technical reasons. Thus, the plan, the design of the materials and their order can only be subject to the protection of copyright either as a whole or if they relate to the connections that exist between the different parts of a work; legal protection can not be given to details, dates, evidence, examples, etc.”

On reading this case law, scientific work seems regularly lacking in the protection of copyright. This is not correct. The Federal Court has pointed out in subsequent case-law that the individual character required depends on the freedom of creation enjoyed by the author; if the nature of the object leaves him little room for maneuver, which is the case for scientific works, the protection of copyright will be granted even if the degree of creative activity is low.

In general, it can be said that what is protected in a scientific work is the form of the expression of the idea, of the opinion or of the discovery, provided that this form is original and individual, which implies that no one with the same specialization or affinities would have been able to describe his scientific work under the same form.

22 ATF 113 II 306, JdT 1988 I 304 (trans.)
23 ATF 113 II 306, JdT 1988 I 304 (trans.)
24 ATF 113 II 306, JdT 1988 I 304 (trans.)
25 ATF 136 III 225
For example, Einstein’s article “The formal foundation of the general theory of relativity” published in the German scientific journal “Annalen der Physik” is protected by copyright. Nevertheless, the theory of relativity is not considered as a work protected by copyright. Although it took the genius of Einstein to develop this theory, it comes from scientific discovery, from the laws of nature and for these reasons, this theory has belonged to the public domain since its publication.

To discover is not to create. A scientific discovery is not a scientific work protected by copyright. A scientific work is protected as long as it shows a minimum of creative effort. In general, it can be said that what is protected in a scientific work is the form of the expression of the idea, of the opinion or of the discovery, provided that this form is original and individual.

2.3. AUTHORSHIP AND CO-AUTHORSHIP

The author of a work is the natural person who created it\(^{26}\). When several people have contributed to the realization of the work, the copyright belongs to them in common; we are talking about coauthors\(^{27}\).

With regard to scientific works, most often, those who do not participate in the writing of the work do not acquire the status of co-author. Indeed, as mentioned above, the scientific work is protected by its form, by its expression and not by the idea. Nevertheless, the one who influences the articulation of the work (either by the structure or the choice of examples) can also obtain the status of co-author\(^{28}\).

The Swiss Academies of Sciences have drawn up a code of good practice on the integrity of scientific research\(^{29}\) which states in article 3.3: “Anyone who, through his/her own scientific work, has made a substantial contribution to the planning, execution, evaluation or supervision of research, and to writing the manuscript, qualifies for authorship”\(^{30}\). This article provides also that a managerial position does not in itself justify authorship. Finally, it provides that the status of honorary author does not exist.

The Swiss Academies of Sciences have also published recommendations on authorship in scientific publications\(^{31}\). According to these recommendations, authorship is given to “anyone who, through his/her own scientific work, has made a substantial contribution to the planning, execution, evaluation or supervision of research, and to writing\(^{32}\) the manuscript, qualifies for authorship”\(^{33}\).

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26 Article 6 CopA  
27 Article 7 para. 1 CopA  
28 IVAN CHERPILLOD, CR LDA, article 7, p. 57  
29 Swiss Academies of Arts and Sciences, Scientific integrity : principles and rules of procedure, 2008  
30 Swiss Academies of Arts and Sciences, Scientific integrity : principles and rules of procedure, 2008, p.18  
31 Swiss Academies of Arts and Sciences, Authorship in scientific publications – analysis and recommendations, 2013  
32 Our underlining  
33 Swiss Academies of Arts and Sciences, Authorship in scientific publications – analysis and recommendations, 2013
EPFL and ETH Zurich have issued Guidelines for Research Integrity which incorporate the recommendations of the Swiss Academies of Sciences. According to said guidelines, in order to be considered an author, a researcher must fulfill the following criteria: (i) have provided an essential contribution to the planning, carrying out, evaluation and control of the research work; (ii) have participated in the writing of the manuscript; and (iii) have approved the final version of the manuscript.34

As regards the Universities of Lausanne, Geneva and Bern (in particular), they also issued guidelines on scientific integrity in the field of research. According to these guidelines, the requirement of participation in the writing of the manuscript is not necessary to obtain the status of co-author. The guidelines of the above universities provide that authorship is awarded to the person who, through his personal work, has made an essential contribution to the research work during its planning, execution, interpretation or control.35

The European Code of Conduct for Research Integrity states that: ‘All authors agree on the authors’ order of quotation and recognize that paternity itself is based on a significant contribution to research design, collection of relevant data, analysis or interpretation of results.’37 This code further specifies that the authors have to recognize appropriately the assistance of third parties when it constitutes an important intellectual contribution. Third parties could include collaborators, assistants and donors who have influenced the research work.

In the context of scientific publications, it is common for articles to be analyzed by experts (peer validation). Peers can not be considered co-authors of the work if they make a judgment, express a criticism or offer suggestions for improvement.38

The author of a work is the natural person who created it. According to the Swiss Academies of Sciences and the directives of EPFL and ETH ZH, it is necessary to have participated in the writing of a manuscript to achieve the status of co-author. According to the guidelines of most Swiss universities, the requirement of participation in the writing of the manuscript is not necessary to obtain this status, nevertheless an essential contribution to the research work is required.

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34 EPFL, Directive concerning research integrity and good scientific practice, status as at 1st January 2017, art. 11, ETH Zürich, Guidelines for Research Integrity, 14 November 2007, art. 14
35 Unil, Directive de la Direction 4.2 Intégrité scientifique dans le domaine de la recherche et procédure à suivre en cas de manquement à l’intégrité, 8 May 2017, art. 2.10 ; Universität Bern, Regulations concerning scientific integrity, 16 October 2012, art. 3 para. 2 let. f ; Unige, Intégrité dans la recherche scientifique, 12 April 2012, art. 2.11
36 The European Code of Conduct for Research Integrity, 2018
37 The European Code of Conduct for Research Integrity, 2018, article 2.7 p. 7
38 RETO HILTY/ MATTHIAS SEEMANN, Open Access – L’accès aux publications scientifiques dans le droit suisse, novembre 2009, p. 25
2.4. THE RIGHTS CONFERRED ON THE AUTHOR

Unlike trademarks or patents (which require registration), there is no need to follow a formal process to benefit from copyright protection. There is no register for protected works. The work is protected *de facto* from its creation\(^{39}\).

It is not necessary to put the symbol © (for copyright) on the copies of the work. Nevertheless, this symbol followed by the name of the rights holder and the year of first publication may be useful in informing the public that the author intends to avail himself of his rights and thereby discourage plagiarism.

Copyright gives the authors moral and economic rights. The *economic rights* allow the author to earn an income from the work he has created (rights of disclosure, reproduction, retransmission, etc.)\(^{40}\). Moral rights protect the personality of the author. They sustain the particular link that exists between an author and his work, in particular the right to claim the authorship of a work, the right to decide on its disclosure and to oppose infringements\(^ {41}\). The economic rights of a work may be assigned, unlike moral rights.

The Copyright Act provides, however, that under specific circumstances a work may be used without having to obtain the consent of the author or without having to pay for it. These include the use of a work for private purposes\(^ {42}\), news reports\(^ {43}\) or for quotations\(^ {44}\). As part of this article, we will only discuss the citation exception.

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**A work is protected *de facto* from its creation (no registration necessary). Copyright confers on authors (i) moral rights, which sustain the particular link that exists between an author and his work (e.g. paternity rights) and (ii) economic rights, which allow the author to realize an income from the work he has created. Moral rights are non-transferable, unlike economic rights.**

2.5. THE EXCEPTION OF THE QUOTE

The exception of the quote is introduced in the public interest. It represents a *restriction* of copyright in order to facilitate and promote free intellectual discussion and free debate of ideas\(^ {45}\).

The citation exception is one of the most important restrictions on copyright.

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39 Article 29 para. 1 CopA
40 Article 10 CopA
41 Article 9 CopA; VINCENT SALVADÉ, *Droit d’auteur et technologies de l’information et de la communication, quid iuris*, 2015, p. 8
42 Article 19 CopA
43 Article 28 CopA
44 Article 25 CopA
45 PIERRE-EMMANUEL RUEDIN, *La citation en droit d’auteur*, p. 5
Article 25 para. 1 CopA provides that “[t]he quotations from disclosed works are lawful to the extent that they serve as comment, reference or demonstration and as far as their use justifies their extent.”

According to the CopA, the obligation to quote applies only to protected works. Everyone can freely use a work that has never been protected or is no longer protected by the CopA, or a non-original part of a protected work. It should be remembered here that scientific ethics nevertheless requires mentioning the source from which an idea is drawn.

The quote is lawful to the extent that it is subordinate to the content in which it is embedded. The quote must remain ancillary. The quote is limited in its magnitude; it can not go beyond what is necessary to achieve the desired goal.

Article 25 para. 2 CopA specifies the formal conditions of the quotation: some kind of indication that it is a quotation, mention of the source and the name of the author.

It is important that the quotation be distinguishable from the content in which it is inserted. Thus, the passage quoted must be clearly highlighted (e.g. in quotation marks, italicized or in a separate paragraph). The reference to the source must make it possible to identify the work from which the quotation is drawn, even if the item is taken from a previous personal work of the author.

According to custom, the quotation must mention the title of the work quoted, the pages or any other indications which make it possible to find the quoted passages, the number, the year of edition, the publishing house as well as the name of the author.

The question of whether graphs or spreadsheets can be inserted into a work as a quote is controversial. Such elements are considered visual works. Given that these elements can be considered as full-fledged works and that the citation legislation requires that it be limited in its scope, the quotation of an entire work should not be permitted.

Nevertheless, it is necessary to define whether graphs or spreadsheets containing facts or figures can be considered as works fulfilling the criterion of individuality (see above 2.1). We are of the opinion that if these elements can be presented in the same way by another person with the same specialization as the author, then they do not constitute works protected by copyright. It should be possible to use such elements without even complying with the citation rules. However, and as mentioned above, scientific ethics requires acknowledging the source of the graph or spreadsheets.

46 STEVE REUSSER, L’admissibilité des hyperliens en droit d’auteur, Helbing Lichtenhahn, 2014, p. 102
47 PIERRE-EMMANUEL RUEDIN, La citation en droit d’auteur, p. 114
48 DENIS BARRELET / STEPHANE WERLY, Droit de la communication, Précis de droit Stämpfli, 2011, p.621
49 MARC-ANDRÉ RENOLD / RAPHAEL CONTEL, CR LDA, article 25, p. 285
50 MARC-ANDRÉ RENOLD / RAPHAEL CONTEL, CR LDA, article 25, p. 285
51 MARC-ANDRÉ RENOLD / RAPHAEL CONTEL, CR LDA, article 25, p. 286
52 PIERRE-EMMANUEL RUEDIN, La citation en droit d’auteur, p. 206
Also note that a quotation from a computer program is a priori lawful. In a scientific article, reproduction of some lines of software programming is allowed in order to highlight an error or a particularity, for example\textsuperscript{53}.

Any intentional violation of the quote obligation is a contravention punishable by fine\textsuperscript{64}.

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The quote must remain ancillary to the content in which it is embedded. The question of whether graphs or spreadsheets can be inserted into a work as a quote is controversial. We are of the opinion that if they may be submitted by another person with the same specialization as the author, then they do not constitute works protected by copyright. Nevertheless, scientific ethics requires mentioning the source of the graph or spreadsheets.

### 2.6. THE DURATION OF PROTECTION

Copyright protection ends \textbf{70 years} after the death of the author\textsuperscript{55}. For computer programs, the term of protection expires \textbf{50 years} after the death of the author\textsuperscript{56}. When several people have participated in the creation of a work or a program, copyright protection ends 70 and 50 years respectively after the death of the last person involved\textsuperscript{57}.

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Copyright protection ends 70 years after the death of the author. For computer programs, the term of protection expires 50 years after the death of the author.

### 2.7. THE APPLICATION OF THE COPA IN INTERNATIONAL DISPUTES

Copyright is subject to the principle of territoriality, which means that the law of the country where protection is sought is in principle applicable\textsuperscript{58}. When a dispute involves parties from different countries, the injured party will then have to analyze the rules of private international law to determine the forum and the applicable law, subject to an agreement providing for an election of rights. Swiss private international law (PILA) states that the jurisdiction of the place where the unlawful act occurred is competent. This place is usually the same as the domicile of the injured party. With regard to the applicable law, the PILA provides that the injured party may choose the law where the unlawful act occurred which is consequently the law of

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\textsuperscript{53} PIERRE-EMMANUEL RUEDIN, \textit{La citation en droit d'auteur}, p. 225
\textsuperscript{54} Article 68 CopA
\textsuperscript{55} Article 29 para. 2 let. b CopA
\textsuperscript{56} Article 29 para. 2 let. a CopA
\textsuperscript{57} Article 30 CopA
\textsuperscript{58} MICHEL JACCARD / EVA CELLINA, \textit{Les Creative Commons, avenir du droit d'auteur ?} SJ 2017 II p. 229 et seq.
his/her domicile. As a consequence, in principle, an injured party who is domiciled in Switzerland can sue a foreign plagiarist in the courts of his/her domicile and apply Swiss law.\textsuperscript{59}

In principle, an injured party who is domiciled in Switzerland can sue a foreign plagiarist in the courts of his/her domicile and apply Swiss law.

### 2.8. RISKS AND PENALTIES FOR COPYRIGHT INFRINGEMENT

The person who uses a work without the prior permission of the author violates the copyright if it does not benefit from an exception provided for by law or without conventional authorization. This copyright infringement is punishable by civil and criminal penalties.

On the civil side, an action for injunction\textsuperscript{60} and/or an action for damages may be brought. This last action is successful if the victim proves that she has suffered damages\textsuperscript{61}. There are other civil actions such as unfair competition.

From the perspective of the criminal code, whoever, intentionally and without right, uses a work under a false designation or a designation that differs from that decided by the author, publishes a work, modifies a work, uses a work to create a derivate work, produces copies of a work in any manner, offers, transfers or otherwise distributes copies of a work is punishable in case of complaint by a custodial sentence of up to one year or a pecuniary penalty.

Copyright infringement is punishable by civil and criminal penalties. On the civil side, an action for damages may be brought. On the criminal side, anyone who intentionally infringes copyright is liable to a custodial sentence of up to one year or a pecuniary penalty.

### 2.9. CASE STUDY

The following case study contains both examples drawn from case law and cases of which we have knowledge and which we have analyzed in the light of the above statement.

The following are considered copyrightable: scientific textbooks\textsuperscript{62}, a monograph\textsuperscript{63}, a commentary\textsuperscript{64}, exercises and instructions contained in a manual when they constitute the original result of an intellectual creation\textsuperscript{65},

\textsuperscript{59} JULIEN FRANCEY, La responsabilité délictuelle des fournisseurs d'hébergement et d'accès Internet, Schultess, 2017, p. 340

\textsuperscript{60} The purpose of this action is to request the suspension of an infringement of copyright.

\textsuperscript{61} RALPH SCHLOSSER, CR LDA, article 62, p. 51

\textsuperscript{62} ATF 88 IV 123, JdT 1963 IV 25 (trans.)

\textsuperscript{63} FRANÇOIS DESSEMONTET, CR LDA, article 2, p. 32.

\textsuperscript{64} FRANÇOIS DESSEMONTET, CR LDA, article 2, p. 32.

\textsuperscript{65} ATF 88 IV 123, JdT 1963 IV 25 (trans.)
a thesis (with the exception of raw data, scientific knowledge, abstract theories or methods), databases (provided that the choice of data or their organization are not purely and simply dictated by the purpose of the database considered), a patent application specification and its various parts (before the application is published), a cartographic representation of rocky ground (as long as it depends on the aesthetic will of the cartographer).

In our opinion, the following are protectable: a methodology based on the author’s experience and knowledge, a collection of texts or scientific images (even if not commented on provided that the author has made a choice and followed a certain personal schema by retaining some texts and excluding others), a catalog as long as it does not constitute a basic enumeration but is the result of research and classification work, the images from a PET scan if the user exercised a choice of image parameters (framing, angle of view, etc.).

On the other hand, the following have been considered non-protectable: scientific data (or research data), a discovery or a scientific idea, fascicles and publications of patent applications (as soon as the application is published), logarithmic tables, a drug compendium (since its arrangement is factual, purely logical, without any individuality).

In our opinion, the following are non-protectable: questionnaires allowing the establishment of diagnoses, as long as only the semantics of the questions are decisive and the order of the questions random.
3. THE DISCLOSURE OF THE WORK

The author has the exclusive right to decide if, when and how his work will be disclosed\textsuperscript{79}.

The author may decide to publish his work via a traditional publisher or to publish it in Open Access. He can also decide to associate these two modes of publication (see para 3.2.2). In this case, the author must ensure that the rights granted to the publisher and to the Open Access platform are compatible.

First, we will analyze the standard content of a publishing contract (see para 3.1) and then the different publication paths in Open Access (see para 3.2).

3.1. THE TRADITIONAL PUBLISHING AGREEMENT

There are two main types of publishing agreements. The agreement that assigns copyright to the publisher and the license agreement.

In an assignment agreement, the author assigns his economic rights to the publisher. The publisher is then granted an absolute right over the work which enables him/her to sue anyone who infringes his/her right, including the author himself.

In a license agreement, the author retains his rights. The publisher obtains only the authorization (the license) to use the work. The author remains the owner of his work. In the case of an exclusive license, the author undertakes not to grant other licenses, whereas in the case of a non-exclusive license, the author may grant other licenses to third parties.

In order to determine whether an author who has published a work through a publisher is allowed to file it in parallel on an Open Access platform, it is necessary to analyze what rights the author has transferred.

We can highly recommend that researchers carefully read the publishing agreements that are offered to them to ensure that they do not transfer more rights to the publisher than necessary. Indeed, it has been found that some publishers do not hesitate, via standard contracts, to acquire rights that are non-transferable (in particular the right to be recognized as author). Such clauses would be declared null and void by Swiss courts, however the author shall be responsible for taking legal actions to obtain such nullity.

\textbf{There are two main types of publishing contracts. The assignment agreement (by which the author assigns to the publisher his economic rights) and the license agreement (by which the author retains his economic rights but authorizes the publisher to use the work under certain conditions).}
3.2. OPEN ACCESS

3.2.1. Misconceptions

At the outset, we want to dispel two misconceptions.

First, it is not true that Open Access publications have less effect on the author’s h-index. On the contrary, recent studies have confirmed that Open Access journals generate more citations\(^80\). These studies also establish that when a researcher publishes in an Open Access journal then the quote rate of his article is not directly correlated to the impact factor of the journal.

Second, Open Access does not question copyright in principle. Indeed, the CopA guarantees the author the exclusive right to decide if, when and how his work will be published. Open Access does not annihilate this right.

3.2.2. Understand Open Access

Open Access is a movement born ten years ago to deal with the explosion of the costs of scientific documentation but also to accelerate the dissemination of publications.

Open Access supports the idea that all scientific publications should be freely accessible worldwide. The principal purpose of these open archives is to enable researchers, scientific organizations and companies – which have limited budgets – to participate in scientific research. This movement also opens up research results to the general public.

It should nevertheless be noted that free access to Open Access is relative. Indeed, if the user has free access to publications, the dissemination of publication has a cost usually borne by the researcher and / or his institution.

To date, various publication roads have been implemented.

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\(^{80}\) Chua S, Qureshi AM, Krishnan V et al. The impact factor of an open access journal does not contribute to an article’s citations [version 1; referees: 2 approved]. F1000Research 2017, 6:208 (doi: 10.12688/f1000research.10892.1)
The **Gold Road** means that the initial and original publication is made in an *Open Access* media product, such as an *Open Access* journal, an *Open Access* book or any other media in *Open Access*. *Open Access* publication costs ("Article Processing Charges" or "APC") are usually paid by the author, an institution or a funder.\(^{81}\)

The **Green Road** provides that authors may, in parallel with the version of the article published, deposit an accepted version of their manuscript on dedicated repositories and make it openly accessible after an embargo period. During this embargo period, the reader must pay the publisher to read the article.

The **Hybrid Road** is an alternative form of the Gold Road where researchers publish in a subscription journal but pay extra to make their publication immediately accessible. Access to scientific results is thus paid twice ("double dipping").

It should be noted that to circumvent the **embargo period** or the time needed for peer review, researchers are more and more regularly depositing a version of their unpublished text ("preprint") on archives intended for this purpose such as arXiv or bioRxiv. Pre-print obviously does not include the modifications required during the peer review. The researcher should check with the publisher if a pre-publication of the article is allowed.

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**The Gold Road:** the initial and original publication is made in an *Open Access* media product.

**The Green Road:** authors can, in parallel with the version of the article published, deposit an accepted version of their manuscript on dedicated repositories and make it openly accessible after an embargo period.

**The Hybrid Road:** an alternative form of the Gold Road where researchers publish in a subscription journal but pay additional fees to make their publication immediately freely accessible.

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### 3.2.3. The new SNSF guidelines on Open Access

Since 1 April 2018, **any research where at least 50% of the cost** was funded by subsidies from the Swiss National Science Foundation (SNSF) must be published through Open Access according to the definition of the Budapest Convention.\(^{82}\)

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81 [http://www.snf.ch/fr/leFNS/points-de-vue-politique-de-recherche/open-access/Pages/default.aspx#Variantes%20de%20l%27Open%20Access](http://www.snf.ch/fr/leFNS/points-de-vue-politique-de-recherche/open-access/Pages/default.aspx#Variantes%20de%20l%27Open%20Access) (10.07.2018)

82 [Article 11.9, General implementation regulations for the Funding Regulations dated 11 July 2018, Swiss National Science Foundation](http://www.snf.ch/fr/leFNS/points-de-vue-politique-de-recherche/open-access/Pages/default.aspx#Variantes%20de%20l%27Open%20Access)
The SNSF advocates the **Gold Road**. In the case of publication through the green channel, the embargo period can not be greater than 6 months for articles in journals and 12 months for all other publications. The SNSF does not support the costs of double dipping. To meet the criteria of the SNSF Green Road, only peer-reviewed prepublications are authorized.

Similar rules exist within the European Union through the Horizon 2020 fund and in the United States through the programs of the National Institute of Health and the National Science Foundation.

For both books and journals in *Open Access*, the SNSF requires that they be published at least with the Creative Commons BY-NC-ND license but recommends the use of the CC BY license (see para 3.3.3).

**Since 1 April 2018, any research where at least 50% of the cost was funded by subsidies from the SNSF must be published through Open Access. The SNSF advocates the Golden Road.**

### 3.2.4. Open Research Data

Open Research Data (“ORD”) is a movement that advocates that research data sharing makes an essential contribution to scientific research in terms of impact, transparency and reproducibility. This principle is based among others on the Concordat on Open Research Data published on July 26, 2016 which sets out principles of good conduct concerning the processing of research data. The convention emphasizes the responsibility of researchers in the processing of their data, including a need to have these data evaluated by their peers.

In addition to access to online publications, the SNSF also supports the principle of Open Research Data. It provides for the requirement to include a Data Management Plan when submitting a request for most...
Researchers funded by the SNSF are required to (i) archive the research data they have worked on and which was presented during their work, (ii) share this data with other researchers, unless they are bound by legal, ethical, copyright, confidentiality or other clauses, and (iii) deposit their data and metadata in existing public archives, in accessible formats that can be reused without restriction by anyone. Thus, the data on which the publications are based must be shared (at least the data needed to reproduce the published results). These data must be made accessible at the latest at the time of the corresponding scientific publication, but researchers are encouraged to make the data available as soon as possible. The data must be published according to the FAIR principles which means Findable - Accessible - Interoperable - Reusable. These principles are used not only by the SNSF, but by a growing number of research promotion organizations, such the H2020 and NIH.

The SNSF supports the principle of Open Research Data. It is necessary to include a data management plan when submitting a query for most incentive instruments. The data must be published according to the FAIR principles.

3.2.5. Text-and-data mining in the new Swiss Copyright Act

To support the transition to Open Access, the Swiss regulatory framework has been adapted to allow and encourage Open Access practices and re-use of protected works.

In this context, the new Swiss Copyright Act introduced an important clause in favor of science. It authorizes the reproduction necessary for the mining of texts and data without having (i) to obtain beforehand the authorization of the author of the reproduced works, nor (ii) to remunerate the author of the reproduced work.

Through the evolution of technologies, information (text, sound, images and other data) is available in large quantities in an electronic format. Text-and-data mining is a scientific technique that makes it possible to utilize this information by using analytical methods that employ algorithms in order to explore large data and to extract new scientific theses or verify existing ones. This mining implies a large quantity of permanently duplicated copies. Since obtaining authorization from the authors of these works is almost impossible and the remuneration related to it disproportionate, the legislator decided to add this new restriction to copyright authorizing duplicate copies for scientific research.

92 http://www.snf.ch/fr/leFNS/points-de-vue-politique-de-recherche/open_research_data/Pages/default.aspx#D%E9claration%20de%20 principe%20du%20FNS%20sur%20le%20libre%20acc%20de%20la%20cherche%20de%20la%20cherche%20de%20la%20cherche%20data%29 (10.07.2018)
94 Article 47, Funding Regulations dated 1st January 2016, Swiss National Science Foundation
95 Dispatch of the Federal Council relating to the amendment of the Federal Act on Copyright and Related Rights dated 22 November 2017, FF 2018 p. 594 et seq.
This new restriction on copyright is subject to conditions, namely that it applies to scientific research. In addition, it must meet a technical need for the research activity, which means that the copy must be made through a technical process related to the research. Only lawfully accessible works may be subject to text mining.

The new Swiss Copyright Act introduced a clause which authorizes text- and data-mining.

3.3. CREATIVE COMMONS

3.3.1. The goal of Creative Commons

Creative Commons is a non-profit organization founded in 2001. The beginning of the 21st century marks the arrival of Web 2.0, thanks to which the Internet is developing and creating new applications. The web becomes a network that favors the sharing of knowledge. The function “copy / paste” becomes a reflex and undermines copyright.

Creative Commons is an infrastructure that consists of offering free of charge a number of copyright licenses that replace “all rights reserved” by “certain rights reserved”.

The goal of Creative Commons licenses is to facilitate the distribution and sharing of works. The Creative Commons licenses were a response to the problem of current copyright laws being a barrier to the spread of culture.

In 2017, there were nearly 1.5 billion works published under Creative Commons, including more than 1.4 million research articles. PLOS (Public Library of Science) has published more than 200,000 research articles under Creative Commons licenses.

Creative Commons is a non-profit organization created to raise public awareness of copyright developments with regard to new technologies.

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98 https://creativecommons.org/faq/fr/#quest-ce-que-certains-droits-reserv%C3%A9s-signifie (07.08.2018)
100 https://stateof.creativecommons.org/ (10.07.2018)
3.3.2. How Creative Commons Works

Schematically, Creative Commons has developed licenses in order to enable information in general to circulate unhindered while protecting authors. In contrast to publishers seeking to be granted an ever-widening range of copyrights, Creative Commons is developing rights of use that adapt to the world of the Internet.

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Creative Commons licenses are contracts designed to be legally enforceable.

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The Creative Commons licenses allow a non-exclusive assignment of some economic rights worldwide and free of charge.

\(^{101}\) https://creativecommons.org/licenses/?lang=fr (10.07.2018)
\(^{102}\) MICHEL JACCARD / EVA CELLINA, Les Creative Commons, avenir du droit d'auteur ? SJ 2017 II p. 229 et seq.
\(^{103}\) MICHEL JACCARD / EVA CELLINA, Les Creative Commons, avenir du droit d'auteur ? SJ 2017 II p. 229 et seq.
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With regard to the **anteriority** of research, it should be remembered that copyright does not prevent third parties from using the knowledge disclosed through the publication of an article. Copyright imposes a quotation obligation. If an author wants to prevent others from using his knowledge, he will have to do so by filing a patent. The anteriority of the research is therefore of value only for the reputation of the author.

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4. CONCLUSION

The more easily accessible a publication is, the more it will be read and quoted. This thesis stems from logic but is also corroborated by the research quoted above.

In pursuing this reasoning, it seems obvious that the more the author grants rights to the user of his work, the more his work can be used in different forms and disclosed through new communication channels. Whereas the obligation of citation remains when using Creative Commons, the author’s h-index can only be positively influenced by a less restrictive Creative Commons license.

Disrupting the traditions of “all rights reserved” with the principle of “certain rights reserved” developed by Creative Commons should thus be beneficial to both the author and the research. In the same vein, we are now seeing the beginnings of a new paradigm: that of abandoning immaterial property in favor of innovation. We are talking about Open Science.

The controversial Elon Musk, CEO of Tesla, said in 2014: “All Our Patent Are Belong To You”\textsuperscript{105}. According to him, patents regularly represent a thin protection against competitors while they slow down innovation. Elon Musk has allowed everyone to freely use the technology patented by Tesla.

A Danish university\textsuperscript{106} promotes and practices the Open Science movement through a dedicated platform\textsuperscript{107}. This initiative provides that neither the university nor the private companies involved in funding research can patent results. The results are available to all, free of charge, through the platform. Large commercial companies like LEGO, VELUX or ECCO are participating in this initiative.

We are of the opinion that these philosophies supported by the Open Access movements, by Creative Commons and even by Open Science initiatives do not infringe copyright as mentioned above. Indeed, the moral rights intrinsically linked to the author of a work are not called into question by these new methods of dissemination of knowledge: the obligation of quotation is always preserved.

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* * * *

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\textsuperscript{105} https://www.tesla.com/blog/all-our-patent-are-belong-you?redirect=no (10.07.2018)


\textsuperscript{107} https://spoman-os.org/ (10.07.2018)