

Legal Aspects in the Collaborative Production of Open Digital Resources

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Abstract. The production of intellectual content using computer systems is a topic of general interest that has no precise or agreed definitions on issues of open resources, open licensing, open educational resources, open books, and collaborative authorship. When the creation of collaborative works is investigated, the discussion evolves to questions about the concept of authorship itself and the absence of a clear regulatory framework to serve as a support for computer architecture. The study of open licenses and intellectual property intends to enable the creation, edition, reuse, modification, and dissemination of open collaborative works. Collaborative authorial production in computational resources refers to a comprehensive study of the concepts of authorship, original work and its versioning, free licenses, free software, and “openness”. This paper presents the legal dimension and its related aspects established in the legal concept of authorship and licenses as a guide for the creation, publication, and sharing of open digital resources.

Keywords: Open digital resources; concept of authorship; openness; property and moral rights.

Introduction

Technological innovations favor the creation of collaborative and open intellectual works. The communication and interaction between different authors involved in the creation of a work establish a conducive environment for the development of multicultural resources (Ladson-Billings, G., 2004). The creation of a modern work allows an author to become also the producer of the

created resource, which may be digital, cultural, or educational, reflecting a cultural adjustment regarding the creation of works (Amiel, T., Orey, M., & West, R., 2010).

To develop the arguments in this work, it is necessary to present here some guiding concepts regarding the creation of intellectual works. This includes an approach to the relevant scientific literature on the process of development of open resources. One of the concepts studied here is "Openness", as its literal translation into Portuguese, "Opening", which means "to widen", covering the characteristics of Open Resources, which include the possibility to reuse, redistribute, revise, remix, and retain a work, shaping the concept of the "5Rs" (Wiley, D., 2014).

The combination of local features and extensive global interaction determines the human capacity to fill gaps and overcome obstacles, creating new social needs such as requirements for desirable resources, financial capital, human capital, organizational capital, and cultural capital (Wellman, B., 2002). These capitals are available in a network and include the individuals' ability to provide information and knowledge, as well as material, financial, and emotional support (Anastasiou, D., & Schäler, R., 2010). Thereby, initiatives to create and produce open digital resources may be considered as alternatives to different strategies favoring social diffusion of the access to innovations and content. The creation and production of open digital resources, based on the principles of open educational resources (Wiley, D., 2014) available to all individuals, has inherent issues that must be considered, such as legal aspects, cultural differences, specific technological considerations, and strategies that support the premise of Openness of developed resources.

An analysis of the scientific literature relevant to the process of development of open digital resources is helpful in the evaluation of the process of intellectual production, a common process that consists of a set of procedures including the creation, edition, and publication of a work (Paesani, L.M., 2012). Writers, for example, write, edit, and publish their books, and the final product of this process is a textbook in an indivisible form. This model of intellectual production is based on historical practices of authorial rights and writing tools. However, in the context of open digital resources, the distribution in this model finds barriers due to lack of specialized publishers in the concept of authorship in multinational, open, and collaborative creation of open textbooks (Silveira, I.F. et al., 2013).

The creation and sharing of open digital resources undergo a specific adaptation process (Lemos, R., & Branco Júnior, S., 2009) in order to become suitable to the regional reality. In order for sharing to occur, the production of intellectual works encounters some barriers, such as lack of regulatory guides, forms of distribution, and high costs. The distribution (Otsuka et al., 2015) of intellectual property is associated with high costs (Rodes, V. et al., 2012), derived from legal aspects intrinsic to the work and involving the author's economic and moral rights, such as authorship (Paranaguá, P., & Branco, S., 2009).

The process of adaptation takes place during the localization of a created work. This is a necessary step when the objectives of such work include access by individuals inserted in different cultures or regions and by existing

technologies in these individuals' regional context, characterizing the cultural and technological aspects of a work, respectively. Thus, the transformation of local or regional phenomena to global phenomena is known as globalization (Anastasiou, D., & Schäler, R., 2010), which determines the coexistence of integration and local identity (Wiegerling, K., 2004). Therefore, the creation and sharing of open digital resources focus on the process of adaptation of a work, taking into account and integrating multicultural and technological features.

A problem in the creation of an intellectual work, discussed herein, relates to intellectual property rights (Paranaguá, P., & Branco, S., 2009) involving authorship when such work is characterized as an open resource (Wiley, D., 2014). Another challenge concerns the management of the work, such as monitoring of versioning and amount of shared resources (Silveira, I.F. et al., 2013). An environment that takes care of the distribution and monitors the development of content from the original work and the amount of shared resources is a solution to the lack of specialized publishers, as well as to challenges found in the legal aspects involved in multicultural collaborative authorships of open digital resources.

To contextualize the issues listed in this paper, it is necessary to question which legal aspects involved in building and sharing open digital resources should be considered in the preparation of such initiatives. The legal dimension defines the limits of the strategies for adoption, creation, and distribution, providing a framework for sharing the collaborative work as an open digital resource in a multicultural, multinational, and global context (Amiel, T., Orey, M., & West, R., 2010).

The process of creation and use of open digital resources addresses cultural, legal, and technological aspects, and this work details the legal aspects of this process. Within this context, the issues of authorship and intellectual property are presented as a cross-sectional and procedural factor, *i.e.*, if on one hand these issues are based on rights and licensing, on the other hand, their definition is essential in computer specifications and adoption strategies.

The following section presents a study of the legal dimensions involving the creation and production of collaborative works, encompassing the concept of Openness, aspects of moral and economic rights regarding authorship, and the concept of authorship in the creation of open digital resources. These topics delineate the purpose of this work.

I. Legal Dimension of Openness

The creation of a work requires new approaches when analyzed within the concept of Openness, according to Wiley, D. (2014) who describes issues related to the cost and licensing of the author's copyrights. To this author, the term "open" means that a resource is available at no cost and attends five principles known as "5Rs": reuse, redistribute, revise, remix, and retain. These new forms of creation of works also emerge when it comes to the concession of licenses and content exchange. Also, new collaboration tools have been opening up opportunities for new ways to produce open resources, such as open books, including textbooks and collaborative strategies, specifically created with a didactic purpose to be used as textbooks for educational support (Henderson, S., & Nelson, D., 2011).

The collaborative aspect of the creation of a work involves intellectual production from several authors, a process facilitated by a possibility of these authors to communicate using computer systems and the development of such systems. This collaboration is the result of an authoring process carried out by several participants. Therefore, the final product generates a debate and requires the definition of specific criteria regarding the production of open digital resources developed collaboratively.

The study on intellectual property emerges due to a formalization of the law intended to protect intellectual property derived from copyright, industrial property, and *sui generis* intellectual rights. The protection of these rights – positive rights – refers not only to the field of property law, but also to the rights attached to the work, including its creation, novelty, and originality, as well as the author's moral rights (WIPO, 1979).

Intellectual property refers to the area of knowledge that involves patents, industrial designs, author's rights, trademarks, and others (Paesani, L.M., 2012). Similarly, the new forms of communication stimulate the development and legal adaptation, expanding the interpretation and edition of the legislation, intervening, for example, on the rights of the authors, programmers, and musicians. Intellectual property demands legal protection, which in a domestic context is established by national legislation and in an international context by international conventions.

Intellectual property is divided into the study of authors' rights, industrial property, and *sui generis* intellectual rights. Copyright encompasses moral and economic rights but also recognizes the economic use of the author's work by artists, performers, phonogram producers, or radio broadcasting companies (Brazil, 1998), known as related rights. Industrial property relates to the study of industrial creations, patents, trademarks, and industrial design rights. *Sui generis* intellectual rights constitute the legal study of computer software, integrated circuit topography, and cultivars. A computer software has a distinctive authorial treatment that includes, in addition to aspects of authors' rights, other particularities since they are commercial products situated between authors' rights and industrial property (Paesani, L.M., 2012). The study related to integrated circuit topology refers to miniature electronic circuits known as chips, which allow essential technical results such as operating and energetic efficiency or optimization of consumption and heating. These characteristics relate to the topography of the chips and introduce particularities to their legal treatment within the industrial property. Finally, cultivar (or cultivars) refers to genetic improvements of vegetal species obtained by genetic crossing over, a branch of the biotechnology industry, and recognized as intellectual goods, requiring distinctness, uniformity, and stability as necessary requirements for legal protection of the cultivar (Paesani, L.M., 2012).

In this manner, intellectual property would be “genre”, whereas copyright, industrial property, and *sui generis* intellectual right would be “species”.

On an international level, the World Intellectual Property Organization (WIPO) is responsible for the administration of international treaties and related issues. Other international treaties and conventions related to intellectual property include the Paris Convention, Berne Convention, Rome Convention,

Stockholm Conference, and the Trade Related Aspects of Intellectual Property Rights. The latter, known as the TRIPS Agreement, established the legal basis for intellectual property rights related to commerce such as the promotion and dissemination of technological innovations, setting a direction to meet the interests of the producers and users in a balanced way. The Berne Convention, the main international treaty for recognition of authors' rights, is an attempt to harmonize different conceptions about authors' rights in the laws of the signatory nations of this international treaty. The Paris Convention was established as an international treaty to recognize the rights of inventors of models, industrial designs, and trademarks configured in the field of intellectual property. The Rome Convention was established as a source of law for related rights. The international organization responsible for the administration of international treaties on this issue, WIPO, has been part of the United Nations since 1974. The international treaties and conventions, along with the internal laws of each of their signatory countries, provide protection of copyrights, delimiting that the authors have the exclusive rights to use, publish and reproduce their works, which are transmissible to their heirs, to ensure the protection of individual participation in collective works.

The rights over intellectual property are exclusive rights, *i.e.*, rights to exclude third parties other than the holder from the economic enjoyment of the property. These rights clarify that an intervention by the State is required to curb copying, restrict unfair competition, and protect innovations and new intellectual works (Paesani, L.M., 2012). This author also states that intellectual property arises from the law, therefore, is not a natural right, and reflects the cultural heritage of a people.

The first aspect to be considered in intellectual property is the legal context in the authorial production initiative. The copyright system based on the legal tradition of Roman law, unlike Anglo-Saxon systems, considers the work as emanating from the author's personality, establishing a distinction between economic rights, also known as property rights, and moral rights (García, J.J.G., 2013). In Anglo-Saxon systems, moral rights remain outside the laws known as "copyright laws." Mainly because the moral rights in Anglo-Saxon systems deal with the economic rights of a work, they include trading of consumer goods with very similar characteristics as those of properties applicable to physical goods. In the Anglo-American legal system, which is derived from the Anglo-Saxon system (Lemos, R., & Branco Júnior, S., 2009), the rights are considered "copyrights" in which the work is the object in property rights, based on common law, in which the fundamental scope is to protect the work, *i.e.*, the emphasis is on the economic part through reproductive rights. This scheme differs from that of Roman-Germanic origin, in which the author holds the property and the moral rights.

Traditional Latin systems of protection of moral rights have mechanisms that often prevent initiatives of access to intangible assets.

Based on the rights established as copyright emerges copyleft, which is considered a legal mechanism to guarantee that the creators of works are entitled, while still supported, to license the use of such works beyond the limits of the law. Lemos and Branco Junior (2009) report that through licenses inspired by copyleft, the licensee would be granted guarantee, in a generic way, to resort

to third-party works under the terms of a granted public license. Copyright, according to the creators of copyleft, restricts the rights to copy and distribute a given work. Thus, a copyleft license uses copyright laws to ensure that everyone who receives a version of the work is allowed to use, modify, and distribute the work along with its derived versions. Based on that, copyleft can be said to be the opposite of copyright (Lemos, R., & Branco Júnior, S., 2009).

Copyleft licenses certify the rights under copyright, but require all licensees to make reference to the author of the work and to use the same licensing model when redistributing the original work, copies of the work, or derived versions of the work (Moniz, P.P., & Cerdeira, P.C., 2004). In Brazil, for example, copyleft contracts have the concept of the moral rights of the creator of the work, aiming to establish concepts of freedom and restriction within the copyright system, as already occurring in the Brazilian legal system. As a conclusion, Brazil is already inserted in this concept since the country has legal provisions related to the author's moral rights.

The study of authorship and licenses in open cultural and educational resources lacks formalization regarding the criteria for authorship and derivative works. In order to study the set of rights involved in this issue and allow solutions or development of new technologies, one must analyze the problem from a multidisciplinary perspective.

Authorial rights are aspects of the legal context that involve a work, and in the case of authors located in different countries, an open resource must be constructed based on different legal systems, since these contexts delimit the authorial production. The legal training in a given country, or in different countries, is influenced by the cultural context in which the people of the country are inserted. Influences from international treaties can originate laws or different interpretations of the law, which can be internal or external such as laws created within a territory or adopted by international treaties and conventions, respectively. These differences can lead to legal or cultural differences due to each State's sovereignty, resulting in an individual legal training at each country.

Configured as personality rights and human rights in Latin legal systems, authors' rights have a more complex legal protection since only the author of the work can exercise them. In legal systems of common law, moral rights inserted in author's rights laws are not taken into consideration, and only economic rights are highlighted, characterizing moral rights as physical assets and transforming them into marketable consumption goods.

The legal dimension of cultural and educational open resources in terms of intellectual property directs the understanding of blockage or restriction of the economic rights included in the copyright, through the adoption of flexible licenses that incorporate the "5Rs" principle (Wiley, D., 2014). These licenses help the way in which a work is incorporated into the legal system and how the users of such work are able to use it. In addition to the adoption of a license in the creation of open cultural and educational resources, it becomes necessary to observe eventual boundaries and differences in legal interpretations. This observation leads to a broader interpretation, with the adoption of international treaties and conventions by each country, as well as a consensus on as well as a consensus on the application of these treaties and conventions to the case. This

consensus may take place in the form of an authorship contract or agreement in the case of collaborative or derivative works, depending on the domestic laws of each country or based on international standards, thus configuring an orientation in the legal dimension for the creation of open resources.

The following section addresses the legal concepts related to moral and property rights involved in the concept of authorship and elaborates on a study and discussion centered on the author centered on the author, including definitions, forms, and copyrights associated with the author, applying these processes to computer systems and cultural and educational open resources.

II. Moral rights and property rights involved in the concept of authorship

The moral rights of an author are considered personality rights; therefore, they are inalienable and non-transferable. Based on that, the creation of a work emanates from the author's personality, granting the author moral rights, which are the components that unite the author to his work, producing effects throughout his existence, even after his death.

Under Brazilian laws, for example, when an author dies, the author's rights are passed to his successors (Brazil, 1998), including paternity claims, the inclusion of the author's name in the work, and the right to prohibit the publication and alteration of the work. Thus, even if the economic rights in a work are transferred, the moral rights of the author are unavailable. The moral rights of the author can be presented in a list (Brazil, 1998), part of which is presented below:

- Claim, at any time, the authorship of the work;
- Have his name, pseudonym, or conventional sign indicated or announced as the author in the use of his work;
- Maintain the work unpublished;
- Ensure the integrity of the work, opposing to any changes or acts that may harm in any way the work or affect him, the author, in his reputation or honor;
- Modify the work, before or after its use;
- Withdraw the work from circulation or suspend any form of use already authorized when the circulation or use dishonor his reputation and image;
- Have access to a unique and rare copy of the work when it is legitimately in the hands of others, in order to preserve memory of this work with a photographic (or similar) or audiovisual process, causing the least possible inconvenience to the holder, who will be, in any case, indemnified for any caused damage or injury.

Thus, the author's moral rights, which refer to legally protected interests, are incorporeal, immaterial and intellectual, preserving the integrity of the work. The moral rights of the author are personal rights and have the purpose of protecting the creator of the work. These rights reflect the author's personality and, thus, are protected by the intrinsic characteristics of personality rights, such as being imprescriptible, not attachable, irrevocable, and inalienable. Moral rights relate to a work's development, dissemination, and titling. This opposes to

property rights, which involve the economic exploitation of protected works (Paranaguá, P., & Branco, S., 2009).

In addition to the moral concept, the creation of a work also involves the economic concept, here named economic rights, one that authorizes its holder to exploit the work economically. Any goods economically significant in a trade or liable to be alienated or appropriated are considered property rights (Paesani, L.M., 2012). The patrimonial rights of the author arise when he discloses the work by communicating it to the public. By law, these rights are considered as movable, assignable, transferable, and temporary goods. These goods are transferable after death or during life.

The following section addresses the legal concepts that permeate cultural and educational open resources, such as the concept of author, collaborative authorship, moral and property rights, authorship processes, versioning, and open licenses. These concepts involve both legal characteristics and influences regarding new ways to frame technological advances.

III. Concepts of authorship

The Brazilian Copyright Law (Brazil, 1998) states that an "author is an individual who creates a literary, artistic, or scientific" work. It also states that "to identify the author, the creator of a literary, artistic, or scientific work may use his civil name in full or abbreviated with his initials, pseudonym, or any other conventional sign." This law also considers the author of an intellectual work, when no evidence to the contrary exists, that who by one of the identification methods mentioned above according to the use, indicated and announced this quality in such use and "the protection granted to the author can be applied to legal persons, with companies, as provided in this Act".

Based on that, a distinction can be established between author and holder, in which only an individual can be an author, but he may transfer the ownership of his rights to any third party, person or entity. In this case, even though the individual is always the author of the work, the legal holder to exercise the rights over the work can be a legal entity or an individual other than the author (Paranaguá, P., & Branco, S., 2009).

The propagation of the work refers to the author's power to maintain the work unpublished at his will. The recognition of an author's rights over his text, for example, is justified by the intrinsic link that exists between him and his work (Longo, M., & Magnolo, S., 2009). More than a legal right, the authorship is above all a moral right, an intangible good, as well as an economic right to exploitation by those who produced the work. This splits the concept of the authorship of a work into a moral part and an economic part.

Personality rights in the field of intellectual law (Paranaguá, P., & Branco, S., 2009) consider the study of the moral rights of the author and state that they are closely linked to the author's relationship with and development, propagation, and titling of his work. Copyrights are characterized as inalienable and imprescriptible and because they are human rights, they are considered in a way that only the author can exercise them.

Concerning moral rights, there is no consensus in the understanding of the laws in different countries, that is, the paternity right of authorship and the work claim. Therefore, the integrity rights of the author are respected, and he

may object to any distortion, mutilation, or other modification of his work that could harm his honor or reputation. Another understanding is the author's right to withdraw, in which case he may suspend any form of use of his work and be compensated for losses and damages, if appropriate.

The creation of a work requires attention to its authorial context, and based on this discussion about copyright, new forms of authorship emerge, as presented in Figure 1.

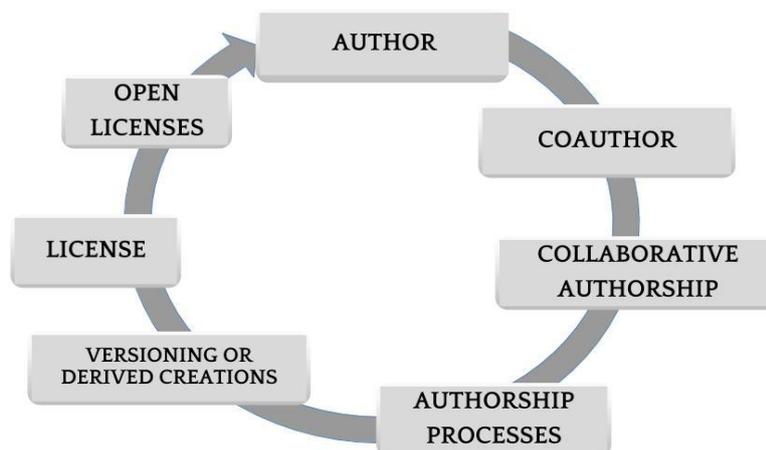


Figure 1. Concept of Authorship

The principles of the different forms of authorship are established on the concept of authorship, along with the legal dimension established according to the new forms of creation of a work. Based on that, the new forms of authorship presented in Figure 1 are discussed below.

Coauthorship: Coauthorship exists when two or more persons are authors of the same work (Paranaguá, P., & Branco, S., 2009). However, the Brazilian Copyright Law (Brazil, 1998) states that coauthorship of a work is attributed to those whose name, pseudonym, or conventional sign is used in the work. It is not considered a coauthor one who simply assisted the author in producing the literary, artistic, or scientific work, revising it, updating it, as well as supervising or directing its publication or presentation by any medium. The law also establishes that to the coauthor, whose contribution can be used separately, are guaranteed all faculties inherent to the creation of an individual work; however, it prohibits use that may be harmful to the exploitation of the common work. It is noteworthy that regarding collective works, the ownership of the property rights is attributed to the organizer. Also, protection is provided to the individual participations of the author in a divisible or indivisible work.

Collaborative Authorship: Collaborators are individuals who work together during a project or a considerable part of it (Katz, S. J., & Martin, B.R., 1997). In scientific production, coauthorship or collaboration occurs when two or more scientists, working together on a research project, share intellectual, economic, or physical resources. However, the type of contribution from each coauthor to the production of the work may be different (Vanz, S.A.S, 2009). A collaboration encompasses different actions, such as expressing an opinion, sharing ideas and data, working together during the course of a project or separately in different parts of a project aiming final integration. Thus, a coauthorship work is an

interactive work that changes through collaboration and with characteristics attributed to a joint work.

Authorship Process: Some innovative processes in the concept of authorship are presented below, with suggestions for issues involving the solution to conflicting laws in the collaborative production of open resources. The solutions map out some choices for the formalization of an authorship, adoption of criteria pre-established by the authors in creating a collaborative work which may be an original or a versioned/derived work. This way, the original works and derivative works must be observed in order to fit in an Authorship Contract or Agreement. All agreements among the coauthors of a work or even agreements in works with a single author must adopt specific licenses that incorporate the principles of Openness. For the exercise of the rights, these Authorship Contracts or Agreements require a record of what the work will provide to the collaborating authors, presented as a set of criteria such as guidelines or suggestions. According to the purpose or planning, it is possible to have a work project, contract, or agreement whose assignment refers to the classification agreed between the authors, providing a solution to be included in different multinational laws.

Versioning or Derived Creations: A work can be classified in two ways, as an original work or a derivative work. Both have inherent copyrights according to their origin. An original work is defined as the first creation (Brazil, 1998), *i.e.*, the first or the original, whereas derivative or versioned works are those that constitute a new intellectual creation resulting from a transformation of the original work. Original works are the innovative works, that is, underived works. Derivative works are altered works that evolve from or complement an original work; a derivative work incorporates the original work and transforms it into a new work.

License: A license is a contract that expresses an authorization for use, or use and enjoyment of intellectual property rights, which can be issued at a cost or for free, or be exclusive or limited. If issued at a cost, it acquires the characteristic of a lease, and if for free, the characteristics of lending. The financial compensation is known as royalty, which is calculated as a percentage of any economic gain obtained with the intellectual property (Pimental, L.O., 2010). The license is the instrument that regulates how the movement of the copyrights will occur. This way, some author's rights may be transferred to third parties, which is a form of continuity and movement established previously according to the desire and prior authorization from the author of the original work, which will occur with the choice of a specific license. The license is an authorization given by the author to a third party who may use the work, exclusively or not, under the terms of the granted authorization, similarly to a lease, if issued at a cost, or lending, if issued for free (Paranaguá, P., & Branco, S., 2009).

Open Licenses: Open licenses emerge as a legal ground expressed by the creators themselves, holders of the authorial rights of a work. These productions allow social movement around the work, formalizing its legal protection and authorizing previously and expressly the conditions of use of such work. These licenses are alternatives to preserving the authorial rights according to the criteria for use and derivation chosen by the author of the original work, based on the adoption of the license that will govern the work. As a result of copyleft,

Creative Commons (CC) licenses have been introduced, which are general public licenses specific to each authoring work (Amiel & Soares, 2016), designed to facilitate the free redistribution of phonographic, scientific, and literary works according to the owner's will (Paesani, L.M., 2012). Other legal contracts with open characteristics are GNU-GPL and GNU-LGPL. In English, GNU is an acronym for General Public License, which is characterized by respect for the freedom of the users, who are free to run, copy, distribute, study, change, and improve a software. This license, often known by its abbreviation, GNU-GPL, aims at establishing licensing network contracts. The person who enjoys this license (Paesani, L.M., 2012) must allow the use of his eventual improvements and modifications to the work. The terms of the license related to copyright are interpreted as an authorization for reuse, adaptation and redefinition of the work, as long as the derivative work maintains the same license. The fundamental difference between "renouncement" and "authorization" is the author's possibility to withdraw the license. This occurs because the terms of the chosen license include aspects related to moral rights, and in the associated legal system, such rights are inalienable. Open licenses allow the use of "separability" clauses, *i.e.*, in the case of incompatibility of some of their terms with the laws of any country, any provision deemed unenforceable in other existing provisions can be eliminated. The revocation of a license is not retroactive, in order to prevent the revocation from affecting those works or copies of the work that are already circulating and existing in a derivative form.

Figure 2, below, shows a conceptual flow of the author's rights in the creation of open digital resources, which may be cultural or educational, contained in the legal dimension of Openness.

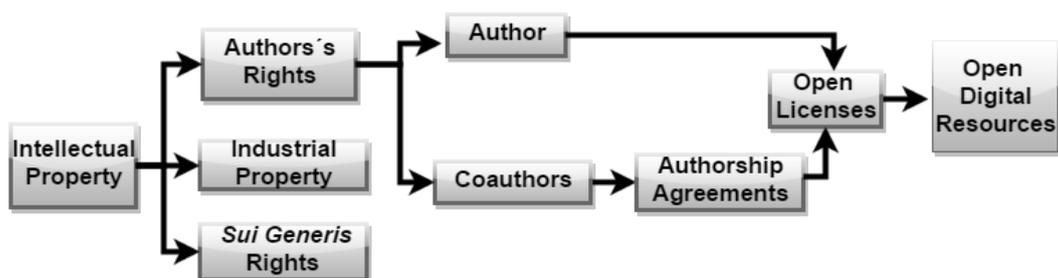


Figure 2. Conceptual flow diagram of the legal aspects involved in the collaborative creation of Open Digital Resources

The conceptual flow of collaborative development of open digital resources (Figure 2) parts from the broader concept of intellectual property, passes through copyright, forms of authorship, agreements and open licenses, thereby generating the open digital resources following all these previous definitions. An analysis of Figure 2 allows the understanding of the understanding of the steps in collaborative authoring of open digital resources, according to its legal aspects, summarized below:

- **Intellectual Property:** A comprehensive specialty of the law that formalizes the protection of intellectual property derived from copyright, industrial property, and *sui generis* intellectual rights. It establishes legal protection from other countries with national legislations on a domestic level and with international conventions on an external level.

- **Sui Generis Rights:** Legal study and provisions pertaining to computer software, integrated circuit topography, and cultivars.
- **Industrial Property:** Study and provisions of laws related to the rights of industrial designs, patents, trademarks, and industrial designs.
- **Authors' Rights:** Provisions of authors' rights that involve moral rights and inherent economic rights to the creation of an Open Digital Resource. Moral rights are part of the author's personality and are inalienable and non-transferable. Economic rights are those that authorize the holder to exploit economically the Open Digital Resource.
- **Author:** The creator and owner of the copyright to an Open Digital Resource.
- **Coauthors:** Two or more creators and copyright holders of the same Open Digital Resource.
- **Authorship Agreements:** Contract or authorship agreements on an Open Digital Resource, whose assignment refers to the classification agreed between the coauthors, providing a solution to their inclusion in different multinational laws.
- **Open Licenses:** Legal protection and prior express authorization regarding the conditions of use of an Open Digital Resource that authorizes reuse, redistribution, revision, remix, and retention of such Open Digital Resource. It allows clauses of "separability", which in the case of incompatibility of some of their terms with the laws of a given country can eliminate any provision considered inapplicable to the existing ones.
- **Open Digital Resources:** Works created by an author or coauthors who are copyright holders with an authorship agreement and who adopt an open license, determining the possibility of reuse, redistribution, revision, remix, and retention of such work.

Open digital resources, when developed as an objective of multicultural access, can be considered an alternative to the traditional publishing of digital materials. Since these resources have different forms of creation and legal characteristics, intellectual property rights reframe and reorganize their social, educational, and accessibility outreach (Ladson-Billings, G., 2004). In authorship, observation of multinational and multicultural characteristics, such as the place of creation of the work and particularities determined by this location (Anastasiou, D., & Schäler, R., 2010) with adaptation of these particularities when conflicts or disagreements arise, enable implementation of initiatives to allow the creation of reusable open resources in extraterritorial contexts. In addition to the cultural aspect, the development of open digital resources is directly linked to copyright and economic issues (Paranaguá, P., & Branco, S., 2009), conceptually oriented toward forms of creation and innovation. The characteristics of this product as an open resource can suppress the economic aspect of diffusion, but the moral copyright aspect of the creators of a work remains established (García, J.J.G., 2013), now without the intrinsic economic aspect.

Open digital resources, either cultural or educational, are published and distributed by electronic means with the intent of facilitating the access to knowledge. For a collaborative production of these resources, the authors must

adopt a license upon the creation of an original work, determining the way in which the original work and the derivative works will be released and treated when the work is shared (Lemos, R., & Branco Júnior, S., 2009). These open digital resources must follow a license, which should be based not on copyright rules – which prohibit copies of any part of a work, favoring the patrimonial aspect – but on open licenses, such as CC, which allow reuse and adaptation of a work in whole or in part (Lemos, R., & Branco Júnior, S., 2009). A resource based on an open license can be reused and modified, and new authors are not required to have an authorization to change derivative works, only to assign to the derivative works the same license of the original work (CC).

Conclusion

Collaboration is an important characteristic in the development and derivation of a work as part of the process of creation and use of open digital resources. Collaboration offers a range of new possibilities for the creation and reuse of materials and contents, resulting in a series of discussions over the creation of original or derivative works, ranging from legal issues to those related to implementation, adoption, and propagation strategies.

Authors' rights are considered fundamental rights. Due to the constant development of technological resources, the protection of the authors' rights undergoes some relativization pertaining to the unfolding of the legal and technological aspects involved in the process. The construction of mechanisms protecting the authors' rights is constantly evolving. Although the legislation on this subject differs in different parts of the world, they have been adapted to the technological advances, redefining the legal multinational and multicultural characteristics of the creation of open digital resources.

Open digital resources should be both instrument and support for the development of knowledge, and are characterized as a type of innovation for the production of intellectual contents across computational resources. The study of specific licenses for the contemplation of the open aspect and the creation of collaborative authoring works through computational resources lack clear definitions in computer architecture; therefore, new approaches to licensing and exchange of content, as well as new collaborative tools open up opportunities for new forms of production of open digital resources. The creation of these resources involves the intellectual production of one or several authors in which the creation of a work by different authors is considered a collaborative authorship.

The final product generates debate and requires the definition of specific criteria for the various forms of authorship and production developed collaboratively and involved in the context of a multinational work. Thus, careful strategic planning should be considered in the creation of open digital resources, taking into account the established legal dimension involving this process.

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