



The Legal Ramifications of AI-Powered News Systems and Copyright on Media Practices

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ABSTRACT: Since 2010, automated news, or artificial intelligence system (AIS)-assisted generation of news articles, has been created. It encompasses a number of approaches that require varying degrees of data, software, and human engagement. This may have several effects on the implementation of intellectual property and copyright law. Using comparative legal methodologies, we investigate their consequences for certain legal categories, such as authorship (and, by extension, needed originality) and kinds of works, including collaborative, derivative, and, most notably, communal works. Sui generis and adjacent rights are also examined for their applicability to AIS-aided news productions. Our primary conclusion is that the economics intellectual property rights are protected by collaborative works in any situation. We suggest a shorter period before a work enters the public domain. There is still a space for greater authoritarian and personal rights. However, it demonstrates more difficulties when it comes to moral rights, particularly in Common Law nations.

KEYWORDS: *automated news; intellectual property; copyright law*

1. INTRODUCTION

In recent years, automated news production has joined the conventional generation of information by humans alone. Since at least 2014 and 2015, it has assumed a variety of shapes. This has been referred to as algorithm journalism [1,2] or robot journalism [1,2], but in general it is referred to as automated journalism [3,4]; it is the sort of news article made with the assistance of autonomous intelligence systems (AIS) [5–7]. The technology "will ultimately lead to autonomous technologies capable of seeing, learning, deciding, and creating without human interference" [8]. In the backdrop lies the issue of a progressive

(even if partial, at least for the time being) replacing of humans by robots. In addition, the development of new professional skills and profiles will continue in the next years, as shown by, for example, [9].

This certainly exceeds the conventional usage of certain instruments to create copyrightable works, such as photography or word processors. Insofar as journalists and the media employ software to aid in the production of news, this should be regarded a protected work. When computers are able to make their own news without human assistance — other than the design of the program — we will be dealing with a different issue. This kind of tool, which will almost certainly be enhanced in the near future, raises several problems about intellectual property, the subject of this research.

As part of the human activity of intellectual production, we must include the many types of journalistic works, from basic news to more complex features and articles. These come within the protection of copyright and, more broadly, intellectual property law. Important clarifications must be made on the phrases to be used in relation to intellectual property. In the Common Law legal tradition, intellectual property refers to copyright (which is known as authors' rights in the other great legal tradition of the world, the so-called Civil Law tradition) and designs, patents, and trademarks. In the Civil Law legal tradition, however, intellectual property is almost synonymous with copyright-authors' right law, and the rest is categorized as industrial property. This may add to the difficulties of comparing the two legal traditions from a global viewpoint, but it may aid in differentiating the numerous consequences of the introduction of the

various artificial intelligence-generated outputs on news reporting.

This element of copyright law as it applies to the media and news reporting has been discussed in a number of earlier books [10] along with many other topics. We want to investigate the particular facets of automated news, or news created with the assistance of artificial intelligence. As a starting point, copyright law may apply to the protection of such works if considerable human interaction is required before the news item is presented to the public. When human interaction is limited, superfluous, or ancillary, we deal with a distinct legal nature and level of protection. Originality, defined as the use of intellectual human talents in order to create a work, is a crucial prerequisite in copyright law, and much more so in the Civil Law legal system, which places the author at the very center of its construction. However, and despite the fact that some national legal systems, such as the Spanish one (Article 5.1 of the Spanish Copyright Act, TRLPI 1/1996, which states that only natural persons can be considered creators of literary, artistic, or scientific works), insist that the only possible author must be a human being, there are other rights applicable to other agents of intellectual creation. This is the case with collective works, which are of particular importance in journalism, as media outputs are viewed as precisely that: a collection of works commissioned to (typically employed) journalists and offered to the public as a group produced under the investment and coordination of a corporate entity, as opposed to a natural person. These corporate companies have multiple copyright rights, and they finally fought and won a legal fight in the European Union to get an exclusive exploitation right to compete with Google News and other major news aggregators [11].

2. What is the meaning of "automated journalism"? An AIS Classification -Assisted News

The already brief evolution of AIS-assisted or automated news seems to be a method of presenting or creating news items using previously obtained and organized data, often by applying templates and increasingly advanced algorithms. In this regard, we adhere to the 2016 definition supplied by A. Graefe: "It is the process of employing software or algorithms to produce news items automatically, without human interaction, following the initial programming of the algorithm, of course. Thus, once the algorithm is built, each stage of the news production process may be

automated, from the gathering and analysis of data to the actual generation and publishing of news" [7]. (p. 9).

The history of AIS-assisted news creation dates back less than 10 years. The (originally British, now worldwide) daily The Guardian began using software in 2010 to write some news on sport data and visuals, and in 2014 conducted similar experiments with Guarbot, a tool for producing news on financial information. Ken Schwencke, a writer formerly employed by The Los Angeles Times, built an algorithm to generate stories on a low-intensity earthquake that occurred in 2014, using data from the United States Geological Survey. A year later, the leading French daily newspaper, Le Monde, used another algorithm developed by the businesses Data2Content and Syllabs to create election-related content using numerical data. A year later, in 2015, a Chinese technology, Dreamwriter, was designed by a gaming firm, Tencent, to generate 916-word news articles about consumer pricing in under one minute with no obvious errors. Since then, several more have appeared: The Associated Press uses Heliograf (used by The Washington Post since 2016), Quill, Soccerbot, and Wordsmith by Automate Insights since 2014. Among these are Recount, StatsMonkey, Media Brain, Kognetics, and RADAR [2].

RADAR is a really intriguing instance. It was developed in 2017 by a news agency, the Press Association, which generated more than 50,000 pieces in three months using this software. The program was created by Urbs Media and supported by the Google Digital News Initiative Innovation Fund to the tune of EUR 150 million. It utilizes open-access datasets on issues such as transportation, education, health, crime, and education, and is able to generate many versions of each item based on client requirements. There was a crew of six journalists behind the RADAR workflow who selected intriguing subjects and oversaw the generation of automated news.

Some themes and portions are more suitable for AIS-assisted newswriting. Finances, election outcomes, and sports coverage have emerged as the most common themes for which algorithms are employed to generate news. The media have sometimes utilized chatbots to connect with people, and these tools are capable of composing their own words based on patterns and the identification of themes and phrases. In 2017, the Innovation Lab of the Spanish native-digital newspaper El Confidencial built a program called AnaFut that generates lower-division football

diaries. In the instance of BeSoccer, sport coverage also includes documentation and bots [12]. The Spanish public broadcasting service, Radio Televisión Española, decided in 2020 to experiment with data extracted from the Spanish Football Federation to offer short news on results of the lower leagues, "interpreting them and presenting a text in natural language, related to the selected event, with no personal intervention," using HTML format and as a mere news, and not penalizing the accuracy of the text. The Washington Post employed comparable techniques to cover the 2016 Olympic Games.

According to Beckett [13], artificial intelligence technologies may assist journalists and the media in three phases: collection, production, and dissemination. This may, however, result in a multitude of outcomes, including, and this is our legal argument, the involvement of human journalists. These outcomes may be:

1) It is possible to generate mash-up news stories by combining previously published pieces. This leads, in legal terms, in derivative works that are required to credit the original works and authors upon which they are based. This is the case with the infographics developed by Adrian Holovaty for the website Chicagocrime.org [14,15]. Intelygenz and Prodigioso Volcán in Spain have developed a method for producing intelligent infographics beginning in 2018 (see <http://losdelvolcán.com/grafia/web>): while the journalist writes the article, a machine-learning comprehension software scans the words and, relating them all, creates some graphics without human intervention—so it can be defined, in legal terms, as a derivative work—to supplement them.

2) The automation of procedures may assist journalists in adding additional context, data, and even internal or external connections to their articles. It is normal practice to search the newsroom's documentation service for relevant news to be utilized and linked. The contextualization of news seems to be the sole domain of human journalists, despite the fact that interfaces and search engines may assist in retrieving relevant information from huge datasets [16]. (p. 179).

3) Another significant use of AIS in news creation is the automated verification of information sources and facts. Truthmeter is one example of a program that automatically rates the journalistic credibility of social media participants in order to inform overall credibility evaluations. The Truthmeter calculates

credibility values based on Twitter API-accessible data" [17].

4) Content curation is another another way in which AIS may assist journalists in their hunt for exclusive information on key issues. This is one of the methods used by RADAR ('Reporters And Data And Robots'), a British Press Association software system that combines people and robots to generate localized stories at scale on issues such as "crime statistics, hospital waiting times, and student absences" [13]. (p. 25).

5) An intriguing use of AIS is the modification or customization of messages for various users, resulting in several versions and, from a legal standpoint, derivative works; any of them is protected by copyright law. The Swedish daily Svenska Dagbladet, for example, developed a program to generate multiple homepages for readers based on the amount of clicks, the length of time or the user's preferences [18]. AIS may assist with subscriptions, which will be a frequent practice in the media sector in 2020—at least until the coronavirus crisis—as a result of the New York Times' paywalls. This is a "dynamic paywall" that firms like Deep Bi are using.

6) Artificial intelligence systems-aided or automated news creation is often based on database exploitation and automation of raw data utilizing patterns, resulting in what some writers call database journalism [19]. (p. 5). The consequences of these techniques may be protected as sui generis rights under copyright rules. Humans contribute patterns; non-human authorship can only exist when the system is able to learn, improve, and generate new patterns.

Thus, artificial intelligence-assisted journalism is now limited to factual material coverage, since only humans are capable of producing more sophisticated and contextualized articles. However, employing AIS to cover factual material is intriguing to media firms because it offers "a cost-effective solution to produce high-quality factual content that performs well in SEO terms" [20].

All of these systems, including those that might be enhanced in the near future, hinge on whether or not they need human post-processing. Some of them, such as Monok and RADAR, do not seem to need it to generate short news articles with little context. Ufarte and Manfredi hypothesize that artificial intelligence systems are incapable of generating complicated or unpredictable text [21]; or, as Belz puts it, "with a great deal of unpredictability in the output" [20].

3. Methods

This article primarily employs a legal comparative analysis. Due to the fact that, as stated, relatively few instances have been considered in court to far, we will rely our analysis on doctrine rather than jurisprudence or the study of particular legal provisions. According to our knowledge, copyright statutes do not specifically address these challenges, and the vast majority of them make no mention of the automated generation of intellectual works. In other words, if new legal difficulties arise as a result of the use of new tools and processes, there has been no practical legislative change to incorporate new provisions to handle those scenarios, thus the current intellectual property rules must be utilized. Even if certain legislative changes have acknowledged artificial intelligence beyond the automated analysis of data, which is significant, it seems that they do not include the automated creation of works, or at least can only be applied to a portion of it. This is the situation with the EU Directive 2019/790 on copyright and associated rights in the digital single market, including Article 3.2 on text and data mining. As some relevant scholars have emphasized, "the fact that artificial intelligence and robotics are much more than science fiction becomes evident" in the working documents of the European Commission, but it appears to be viewed as merely "the next step in the development of a sustainable information society" [8]. (p. 3). Alternatively, automated systems are problematic whenever they are used by platforms like Facebook or YouTube for user identification and filtering [22] (p. 267), which has implications for the literal interpretation of Article 17 of the aforementioned European directive, which requires Internet services to detect unauthorized (and typically derivative) works uploaded by users without permission.

We shall concentrate on the two primary legal categories associated with copyright and intellectual property law: copyright law and intellectual property law.

First, the issue of authorship and, closely connected to it, the need of originality for the law to recognize a work as copyrightable. Second, the job kind. We have progressed the following: The singular work, often a single piece made by one (human) creator. In contrast, a collaborative work is the product of two or more writers working together. In this instance, there are several instances in which AIS has assisted a human journalist in completing his or her task. Derivative

works, in which a new work is developed based on one or more preexisting works, are becoming more prevalent. Both people and robots are capable of creating derivative works based on human- or machine-made originals. Lastly, and this is perhaps the most important aspect of our research, a collective work consists of several works assembled and organised under the direction of another (natural or legal) person. This applies to newspapers, periodicals, broadcasting services, and websites.

Since automated news are created (or transformed) with the assistance of both data, normally structured as a database, and software, additional categories of intellectual property rights must be considered: the so-called *sui generis* rights, normally applicable to databases as a structure, equally created under the requirements and necessities of a corporate entity in order to produce intellectual works, and not necessarily to data the database contains. This whole panorama entails a complicated superposition of rights, some of which are cumulative and not mutually exclusive, to be evaluated in the many examples we shall analyze in the subsequent sections. Even though relatively few instances have been determined in court, it is anticipated that media organizations and practitioners of news reporting—journalists, photographers, infographics designers, and even cartoonists, to name a few—will face some of these circumstances in the near future.

4. Results

The cross-examination of the aforementioned cases, which cover the most prevalent practices of artificial intelligence-assisted journalism to date, their classification according to the legal axis of authorship (and originality) and the type of work, as well as the phase of journalistic work (gathering, production, and dissemination), could help us determine the extent to which copyright law can apply to these new products.

First, it should be highlighted that all of them are the result of the initiative and investment of a corporation, which is often regarded as the body coordinating the production of a group effort. Thus, media organizations as corporate entities are not the creators of a collaborative work, but rather its producers. This is a trait that is more significant in nations with a Civil Law legal heritage than in those with a Common Law legal past, in which an entrepreneurial perspective is more evident than in the authoritarian, individualistic attitude of Civil Law countries. This, which was the root of copyright and writers' rights legal regimes, has been modified throughout time, and the significance

of producers is clear in the case of audiovisual works, for instance. There are a few initiatives to extend this courtesy to the creators of audiovisual works. Article 15 of the Directive on Copyright and Related Rights in the Digital Single Market, 2019, which must be adopted by state members, enacts an ancillary exploitation right for press publishers as a result of lobbying efforts by major newspaper corporations in Europe or the European Union (as of mid-2020, the only one to do so was France). Article 15 is designed to safeguard for two years press articles "concerning internet usage" The length of rights is much less than the protection afforded to personal inventions (the author's life plus 70 years after his or her death), but it is ideal for automated compositions. When an author's name is omitted from the work, no one is required to obtain "an adequate portion of the income." This is a benefit of artificial intelligence-assisted works, since no one is required to receive "an appropriate share of the revenues." The Resolution of the 2019 AIPPI World Congress on Copyright in automatically produced work, one of the most developed publications on this topic, agrees with this view and believes that "the duration should be shorter than for other copyrightable works" [23]. (p. 19). It is vital to note that non-authored works may reach the public domain far sooner than author-created works. Without any type of intellectual property protection, these works may be used, copied, modified, and distributed for the benefit of everyone. One might argue in favor of this alternative if the construction of Artificial Intelligence Systems is a beneficial outcome of Artificial Intelligence for the greater good of society" [8].

This also avoids the application of moral rights, which is especially important in Civil Law, authors' right countries, but not so much in Common Law countries: in the United Kingdom, for example, journalists are an exception to moral rights, and companies are not required to mention the names of their hired workers, despite the fact that they generally recognize them as authors. This legal provision, and a similar one planned in Australia in the Final Report on the Digital Platforms Inquiry by the Australian Competition and Consumer Commission (ACCC), published on July 26, 2019, emphasize the significance of enacting such a right for press publishers in order to help them monetize content.

The subject of authorship, which is a non-negotiable moral right in many nations, particularly those with a Civil Law system, is of utmost relevance when

analyzing the effects of AI-assisted news creation on journalists and businesses. In many nations governed by Civil Law, authorship applies solely to human beings and not to corporate organizations or software. Even though such a clause does not exist in the United States' Copyright Act, we may assume that a similar concept applies, since the Copyright Office has frequently said that it would "register an original work of authorship, provided that it was made by a human person." In the information-gathering phase of journalistic work, artificial intelligence systems function as basic tools; regardless of the complexity of their design, they are controlled by humans and create no publishable content. It should be recalled that facts and data cannot be protected by themselves. We agree with Lin Weeks that "at the most abstract level, automated journalism tales consist of an algorithm or input (known in the industry as clean data) and prose output" [19] (p. 85). Copyright law can only safeguard the second example.

Copyright law only protects the final product that is made available to the public via the use of intellectual talents. In addition, when artificial intelligence systems are employed for data collection, text mining, searches, or verification, human authorship must be acknowledged. Since humans do the original effort to be enhanced, the ultimate product is likewise due to humans and not to machines. When AIS is used for content selection and as a starting point for the generation of news items, human journalists are the ultimate writers. A situation comparable to this occurs when a writer or editor corrects the errors produced by artificial intelligence systems. Before the ultimate publishing of a work, the final responsibility rests with either a person or a corporation.

Evidently, software development may be produced by an individual and commissioned by a business, as is often the case. Following Lin Weeks, the security of the algorithm itself, viewed, we might add, as a type of software, is uncontroversial; the protection of the result itself [19] is more troublesome. When software is used as a tool for creativity, the ultimate responsibility for the results rests with human writers. It is unlikely, but not impossible, that a single person is the founder and inventor of the AIS program. At least one early example exists, the aforementioned journalist Ken Schwencke, who created an algorithm and used its findings in 2014. Since he was in charge of the whole operation, he signed the news. In nations with Common Law, such as Hong Kong, the United Kingdom, Ireland, India, and New Zealand, it is

possible to ascribe authorship to the programmer. For example, section 9(3) of the Copyright, Designs, and Patents Act (CDPA) states that "in the case of a computer-generated literary, dramatic, musical, or artistic work, the author shall be deemed to be the person who made the necessary arrangements for the creation of the work," but section 178 specifies that for a work to be considered computer-generated, it must be "generated by computer in circumstances such that there is no human author of the work." For example, there is an analogous analogy with generative music. A musician may utilize software (such as Wotja, which was created at the request of artists such as Brian Eno) to compose music by modifying parameters and patterns; once this is accomplished, the artificial intelligence system begins composing music, which can be tweaked in real time. These musical compositions are the work of the humans who determine which parameters must be altered, when, and how. We concur with Andrés Guadamuz that "the purpose of such a provision [referring to the UK Copyright Act] is to create an exception to all human authorship requirements by recognizing the work that goes into creating a program capable of generating works, even if the creative spark is generated by a machine" [24].

When the development of a work is only the result of artificial intelligence systems, without any human interaction, which is believed to be achievable only for randomly generated outputs, this may be conceivable in music but unlikely in news reporting, since it might result in illogic. In any event, some instances, such as the Australian Acohs Pty Ltd v. Ucorp Pty Ltd, hold that a work that was not created by a person cannot be protected by copyright (Gadamez, 2017). Some other cases, for example in the European jurisdiction, require the decisive intervention of humans in the final result for a work to be considered copyrightable: the Court of Justice of the European Union dealt with this issue in C-145/10, *Eva-Maria Painer/Standard Verlags* [2011] and C-604/10, *Football Dataco/Yahoo!* [2012] [9]. (p. 321).

The essential issue is thus originality and how to define it. In the aforementioned European instances, it is needed that the work be "the author's own intellectual invention," meaning that (concurrently with a Civil Law, authors' right legal tradition) the work must in some manner be an *oeuvre de l'esprit*: it must include a personal touch. Even though artificial intelligence systems are creative, in the sense that they can produce works utilizing data, patterns, and

algorithms, it is far more challenging to detect originality in their work. In C-5/08 *Infopaq International A/S v Danske Dagblad Forening*, for example, the CJUE reiterated this issue, stating that a work must have certain personal characteristics in order to be protected by copyright law. Such a personality trait may be identified whenever human involvement is a necessary requirement for the production of the work. Always, human involvement is required: According to the World Intellectual Property Organization (WIPO), there are only two solutions to this problem: denying copyright protection to purely computer-created works or attributing the work to the author of the program. In the case of news, there is a third option: attributing it to the corporate body accountable for the collective labor into which this artificial intelligence systems-assisted work is incorporated. In this instance, and as per the Resolution of the 2019 AIPPI World Congress on Copyright in automatically produced works, publishers need a related, adjacent, auxiliary, or sui generis right.

According to our knowledge, this has not yet occurred, but it is not inconceivable that artificial intelligence systems-assisted news, which may use third-party data, could infringe copyright if the source and author of the original work from which the derivative work is derived are not properly cited, and the corporation that publishes it could be sued for infringement. Such a case would assist clarify perspectives, and it was noted, but not elaborated upon, in the Resolution issued by the AIPPI World Congress in September 2019. It is possible, we should add, that in some cases such practices could be considered under the quotation exception — or fair use in the Common Law countries — but it must be examined on a case-by-case basis, with no need to create new exceptions [23] (p. 11), particularly in legal areas such as the European Union, where a closed list of exceptions must be applied. In nations that use fair usage or fair dealing, a case-by-case approach will be required.

Jop Esneijer has examined the question of how the media manages artificial intelligence systems that automatically display certain types of information. "Note that automated scanning of tweets and blogs for relevant content and copy or even publishing them [...] would in principle also require the authorization of the original author, as these are acts of copying or making available to the public, unless they are excepted, for example, if the tweet or blog is in the

public domain." [25] (p. 43). (p. 43). This is due to the fact that we are addressing derivative works.

When news pieces are made mostly with the assistance of artificial intelligence systems, the attribution of paternity is portrayed as anonymous or credited to the corporate person. This is consistent, as we have already mentioned, with the old distinction of the Berne Convention on Copyright of 1886–1887, which stated in Article 2 that the consideration of "literary and artistic works" shall not apply to "news of the day or random facts having the character of press information." The Berlin Convention of 1908 established in further detail which newspaper-published works were copyrightable, i.e., those that may be copied with attribution of author and origin, and which were not. Unlike previous conventions, which distinguished between literary works and *nouvelles du jour*, the Berlin Convention afforded protection to all newspaper-published works. This was a significant improvement over the previous conventions, which distinguished between literary works and *nouvelles du jour*. In reality, the difference was retained in the following conventions: Rome (1928), Brussels (1948), and Paris (1971; revised in 1979), where it is currently codified as Article 2.8. This old distinction may take on a new form in relation to the production of news items produced exclusively or primarily by artificial intelligence systems or produced under the ultimate responsibility of human authors, but the rights on the economic exploitation of all of them must be recognized to the copyright holders of the collective work. Some experts have investigated these examples and determined that it is typical practice for business organizations to sign news articles with the company's name and hardly disclose that they were created with the assistance of artificial intelligence [21]. (p. 13).

5. Discussion

Since the introduction of the World Wide Web in the mid-1990s, journalism innovation has been a focal focus for businesses and academics. The media sector is suffering a huge crisis, particularly since 2008, in which corporations are attempting to redefine a viable economic model, seeking for the sustainability of an activity formerly supported mostly by advertising. Numerous researchers have emphasized the need of optimizing all economic resources for this business, and automated technologies may be "the key to the survivability of news media in the digital age" [26]. In this perspective, we must frame the debate on the function of intellectual property legislation in the

context of automated journalistic outputs. Companies must monetize content, and the development of artificial intelligence systems to aid journalistic work in collecting data, expanding news stories, and spreading them—and even more effectively commercializing them—can aid in this endeavor. As we have shown, artificial intelligence systems need human participation in the majority of situations, and this leaves a personality hint that leads to the conclusion that the output has the uniqueness required for copyright law to be applied. On the contrary, investment should be boosted. The most developed proposal to date, the Resolution of the 2019 AIPPI World Congress on Copyright in artificially generated works, after consulting with numerous national groups from around the world, concludes that the majority of them "consider that the investor (natural or legal person) should be the original owner of the artificially generated works [23]." (p. 16). "New profiles are emerging in news reporting: journalists are adding new skills to their traditional ones, and one of them, in regards to automated news, is to be a designer, programmer, supervisor, or editor of news items created with the aid of software [12] (p. 284); therefore, it is more important than ever to adapt skills and training [27].

The historically evolved legal status of the journalist as an author is now again under jeopardy. An individual approach to intellectual property (ultimately, an authors' rights approach) is increasingly difficult to defend, and the collective, and even derivative works, now play the key role in copyright law. In the most optimistic viewpoints, this is good news for journalists, as artificial intelligence systems-assisted production may free human journalists from heavy tasks and reserve them for a higher level of coverage [21] (p. 5,6) (reports and features, essentially) with a higher added value and, in keeping with the old Berne Convention literal, a more "literary" approach. In any event, there are a variety of methods to alternatively assign authorship or associated rights to an actual person or a corporation, and AIS-assisted news should always be attributed to someone. Maintaining the concept of authorship is crucial in this sense. It is probably more difficult to preserve moral rights when software and a journalist share the burden of producing a news story, and that burden should be balanced in some way. However, we agree with the conclusion of Osha et al, 2019, that economic rights "should not differ between artificially-generated works and regular works" [23]. (p. 10). For the aforementioned reasons, it is quite

difficult to attribute moral rights to the inventors and designers of artificial intelligence systems, and it is even more difficult to attribute them to journalists who contribute to the production of artificial intelligence system-aided news in countries such as the United Kingdom. Article 79 of the 1988 Copyright, Designs and Patents Act provides that the moral right "does not apply to computer programs [or] computer-generated works" or "in connection to the publishing in a newspaper, magazine, or similar periodical." Even though it may seem to be a very limited regulation, it gives insight into how things may be handled in relation to the subject of this article.

In this regard, it appears that there is broad consensus that, according to the definition of the Resolution of the 2019 AIPPI World Congress on Copyright in artificially generated works, "AI generated works should only be eligible for Copyright protection if human intervention was involved in the creation of the work and if the other conditions for protection are met." Works created by artificial intelligence should not be protected by Copyright without human interaction. The most extreme case is when artificial intelligence systems (AIS) are able to learn independently and create news on their own, in which case the so-called "creative agents" are machines [9], or, to use the title of a symposium held in Alicante (Spain) in 2019 [28], whether it is possible for robots to invent and create. As previously discussed, this is not a common occurrence in the media, and when it does occur, the output is often only news, as stated in the Berne Convention on copyright, not traceable to any author but of economic importance to corporate organizations as a collective work. This seems to be the primary category in the current era, in which the media business, in an effort to battle a structural problem, seeks to protect its interests by enforcing this legal category. The main newspaper business in Europe was able to incorporate a new ancillary, exclusive exploitation right in the 2019 Directive on Copyright of the European Union, known as press publishers' rights. Even if automated news is not referenced in Article 17 of the Directive, this interpretation might someday be used to protect the economic interests of the media without compensating any human author.

The overall tendency should be, in our judgment, to accept that there is some uniqueness anytime some human interaction is necessary at some level of the journalist's routine and some guiding, pattern

supplying, instruction, and extensive editing of news items before to publishing are offered. Personal authorship should not be seen as a romantic notion of the exclusive production of a work due to an individual inspiration, but as any intellectual competence necessary to put a work on the market so that it may be correctly and rationally comprehended by humans. Even in ambiguous cases, the corporate entity's responsibility in the production and insertion of such a product into a collective work should be sufficient to secure a neighboring, ancillary right or even a sui generis right generated by the responsibility in providing instructions to structure databases (not such other things are digital media today) and design interfaces to exploit them [23]. (p. 7). There must be a balance between the rights of investors, innovators, and employees, as well as those of the audience and public awareness. In this regard, a modification of the length of rights is required, and substantially shorter rights are anticipated to facilitate the entry of news supported by artificial intelligence systems into the public domain.

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