Ars Ex Machina: Artificial Intelligence, the artist

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Similarly to human beings, machines are now capable of creating.

They can write poetry, compose symphonies and even paint canvasses. They can also take photographs without any human assistance and perform musical pieces with flexibility and expression.

On the technical front, such works and performances are successful to the point of confusing numerous aficionados, who are unable to tell the difference between a work created by humans and something generated by their artificial counterparts. However, with regards to artistic merit, the quality of the artificially-generated work is often criticized.

For legal experts, the question arises as to whether these works meet all of the criteria for recognition of copyright.

The matter of copyright in Canada

Copyright law is the exclusive right to produce, reproduce, sell, licence, publish or perform a work or a major part thereof, whether it be literary, artistic, dramatic or musical[1].

In Canadian law, to be subject to copyright law, a work must be qualified as being an original creation; it must be the product of an author's exercise of skill and judgement[2]. Even though it is difficult to confirm whether a computer can demonstrate skill and judgement, the definition proposed by the Supreme Court clarifies the two aptitudes that well describe the task performed by the computer when it creates works of art. Incidentally, creative nature is never considered as part of the concept of originality: a work needs to be neither novel nor unique.

Process of Artistic Creation of an Intelligent System

Any creation made by an artificial intelligence system draws its origin from one or more algorithms, that is to say, a series of mathematical operations is performed in order to obtain a result. Such work may be qualified as being new, provided that it does not reproduce an existing work. However, it often puts forth a mechanical nature that hinders its assimilation into being considered a real work of art.

Works generated by a computer in an autonomous manner are usually less eclectic than those generated by their human counterparts[3]. A system can, for instance, after having been exposed to a vast quantity of Mozart's symphonies and having acquired the necessary musical theory, generate musical works similar to those of Mozart. Even if they may be criticized from an artistic innovation

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standpoint, such works meet the originality criteria in the legal sense since they appeal to a certain acquired aptitude (talent) and to evaluation of various possible options (judgment). Composing a poem in the style of Verlaine or a Beethoven-like symphony may ultimately lead, according to these criteria, to the recognition of a copyright.

The Performer Robot

The *Copyright Act*[4] also provides protection on the performers' rights in their performance of a given work[5]. For a number of years now, computer programs have been able to "play" musical pieces autonomously. Recently, the quality of the performances of these programs has improved considerably and they demonstrate a subtlety and flexibility that was previously lacking. For example, the Swiss firm ABB developed YuMi, the robot orchestra conductor capable of conducting an orchestra of human musicians and following the vocalises of a solo tenor[6]. Closer to us, the interactive virtual singer Maya Kodes was created by Neweb.tv, a Montréal-based firm. On stage, Maya sings and interacts with a group of back-up musicians and dancers[7].

This presents a plethora of advantages for film producers, impresarios, video game creators or advertisers who, thanks to such technological innovations, may henceforth generate original scores after having selected certain parameters, such as genre, ambience and duration, without having to pay for the licence to the rights held by various copyright holders to this music such as the composer, the creator and the performer.

Who holds the copyrights?

Elsewhere in the world

The U.S. Copyright Office has issued a specific set of regulations requiring that copyright holders be human beings[8]. Works produced by a machine or another mechanical process that operates in a random or automatic manner are not, according to these regulations, eligible to be covered by copyright without there being creative involvement from a human being[9]. Thus, it appears that these provisions give rise to a grey zone, since the law has not been adjusted accordingly.

Some jurisdictions, such as Australia[10], have established that copyright law is closely related to a human being. Others have created a legal fiction whereby the creator of the computer program is considered as being the copyright holder. This is true in the United Kingdom, Ireland and New Zealand[11].

The latter solution is subject of criticism whereby the proposed legal fiction makes light of the legal complexities related to creating a computer program. In fact, the distance between the author of the program and the work ultimately created may prove significant[12]. It is possible that an artificial intelligence program creates something that is completely unexpected and undesired by the person who developed the program[13]. The humans behind the artificial intelligence system are not themselves the authors of the underlying message of the literary work or the melody resulting from the music composed.

In Canada

In the United States, an author proposes that the work produced by a machine be considered as a work produced by an employee hired to create or perform works that fall within the scope of the United States Copyright Act[14]. The concept of the work made for hire also exists in the *Copyright*

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Act in Canada, with certain technical nuances[15]. According to this idea, the programmer or person who orders the work of the programmer he or she employs becomes the holder of the economic rights tied to the work, that is to say, the rights related to marketing the work.

This solution evacuates the notion of moral rights, that is, the right, for the author, to preserve the integrity of his or her work as well as the right to invoke, even under a pseudonym, creation of the work or even the right to remain anonymous[16]. Since these rights cannot be assigned, it is difficult to foresee that the solution proposed by the purported author be viable under Canadian law.

In conclusion, the introduction of a new legal regime adapted to artistic creations produced by artificial intelligence systems is perceived as being necessary by many with respect to the works and the copyrights therein. For the time being, since the matter has yet to go before the courts, the foreseeable solutions are divided into two camps. On the one hand, we can recognize the copyright of the person who created the artificial intelligence that produced the work. On the other hand, if we do not succeed in binding the copyright to neither the programmer nor the machine, there is a risk that the work will fall into the public domain and thereby lose its economic value. One thing is certain: the desired legal regime must consider the rights of programmers behind the system with respect to the work ultimately produced and the level of control that such individuals may have over the content subsequently produced.

Lavery created the Lavery Legal Lab on Artificial Intelligence (L3AI) to analyze and monitor recent and anticipated developments in artificial intelligence from a legal perspective. Our Lab is interested in all projects pertaining to artificial intelligence (AI) and their legal peculiarities, particularly the various branches and applications of artificial intelligence which will rapidly appear in companies and industries.

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1. The *Copyright Act*, R.S.C. 1985, c. C-42, articles 3, 15, 18
2. The Supreme Court defines talent as “the use of one’s knowledge, developed aptitude or practised ability in producing the work.” It describes judgment as “one’s capacity for discernment or ability to form an opinion or evaluation by comparing different possible options in producing the work”. *CCH Canadian Ltd.* v. *Law Society of Upper Canada*, 2004 SCC 13
3. Bridy, A. (2012) Coding creativity: copyright of the artificially intelligent author. *Stan. Tech. L. Rev., 1.*
4. RSC 1985, c C-42
5. *Id*., art. 15.
6. YuMi the robot conducts Verdi with Italian Orchestra, Reuters, September 13, 2017, https://www.reuters.com/article/us-italy-concert-robot/yumi-the-robot-conducts-verdi-with-italian-orchestra-idUSKCN1BO0V2.
7. Kirstin Falcao, Montreal developers create 1st interactive holographic pop star, CBC News, November 2, 2016, http://www.cbc.ca/news/canada/montreal/maya-kodes-virtual-singer-1.3833750.
8. U.S. Copyright Office, *Compendium of U.S. Copyright Office Practices*306 (3d ed. 2017).
9. *Id*., 313.2
10. *Acohs Pty Ltd v Ucorp Pty Ltd* (2012) FCAFC 16.
11. *Copyright, Designs and Patents Act,* 1988 c. 48 9(3) (.U.K.); *Copyright Act* 1994, 5 (N.Z.); *Copyright and Related Rights Act*, 2000, Part I, 2 (Act. No. 28/2000).
12. *Supra*, note 3.
13. Wagner, J. (2017). Rise of the Artificial Intelligence Author, *The Advocate*, 75, 527.
14. *Supra*, note 3.
15. Article 13(3) of the *Copyright Act* establishes this specific legal regime and distinguishes between an employment contract and a contract related to a journalistic contribution.
16. *Supra*, note 4, art. 14.1(1).

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