

Artificial Intelligence and Copyright

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In this journal we are interested in publishing in the medical field.

The main "classical" rules on how to publish in medicine were synthesised in 1997 and published in different sources, such

as the *New England Journal of Medicine* (1).

Since then, no major modifications were communicated over more than 25 years.

The birth of what we call today "Artificial Intelligence" (AI) dates back in the 1950s.

But first: what is intelligence? Intelligence is the ability to achieve goals in the world.

Roots of intelligence go far into history and, in the beginning, procedures used by intelligence were the automate ones. For instance, a friend of Plato constructed an "automated pigeon". Later on, Leonardo da Vinci created "automatons".

In 1950, Alan Turing, a British mathematician, published "Computer Machinery and Intelligence", and the Turing Machine has been considered one of the first computers. We have to

remind that, during the Second World War, the same A. Turing was the main contributor at breaking the German secret codes.

However, John McCarthy, an American computer scientist, is considered the father of AI. In 1955, in Dartmouth, UK, he held at a meeting with computer scientists, a work in which he used the term "Artificial Intelligence". An year later, in 1956, in Dartmouth, four scientists, including McCarthy, published what was called "the Constitutional Convention of AI".

Today, AI is considered to match or surpass the human capabilities across the valuable cognitive works. It has many, many domains.

The domain linked to copyright is considered to address Generative Artificial Intelligence, a subset of AI which generates information, that is, content creation and design of new hypotheses and models in different fields, including scientific research.

The ownership of AI-Generated Works may be differently interpreted around the world. But there is a common principle: 1) if the work is generated solely by AI, there is no copyright; and 2) if the work is a mixture of AI and human creation, the human copyright may be attributed only to the human part of the work. Because generally, copyright only applies to human direct

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production. However, the analysis of the point of linkage between AI work and human contribution may be delicate.

In reference (2) there is a synthesis of some particular rules which apply to copyright of a published work in different parts of the world (2). Here are some examples.

In the United States of America, there is no copyright for whatever has been produced only by AI. If there is a human add, only this may be copyrighted (3).

In the European Union (EU), there is a package of 13 Directives and two regulations on copyright authorship. It is largely debated the C-5/08 judged by the Danish Højesteret court, which addressed 13 questions to the European Court of Justice. Their answers were according to the Directive 2001/29 of the EU, especially article 5(1). The debate was mainly about the way in which the human input is integrated into the AI work. And member states of the EU are to individually determine how the human input is integrated to the AI output. Some German and French models are provided.

For the UK, rules are similar to the above-mentioned EU rules. There is a special law for details (6).

In China, for the moment, the aspects seem to be similar to the previously described rules (7).

However, there are debates whether a work generated “purely by AI” could be found copyrightable, especially judging the “arrangement and selection” of inputs.

The regulations regarding AI and ownership rights are rapidly and vigorously changing. Here is an example of EU acts which are provided today as drafts and already change different other fragments of laws: *P9_TA(2024)0138 Artificial Intelligence Act European Parliament legislative resolution of 13 March 2024 on the proposal for a regulation of the European Parliament and of the Council on laying down harmonised rules on Artificial Intelligence (Artificial Intelligence Act) and amending certain Union Legislative Acts (COM(2021)0206 – C9-0146/2021 – 2021/0106(COD)) (Ordinary legislative procedure: first reading).*

After debates and final approval, this act will be entirely applied by 2026.

Probably in other parts of the world, preoccupations are similar and may change the current rules.

Artificial Intelligence has undoubtedly developed and enriched our scientific work. However, there is a need for more and more careful attention to how this work is going to be published. □

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