Trends and Developments in Artificial Intelligence: Challenges to Copyright

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Introduction

The impact of Artificial Intelligence (AI) on intellectual property (IP) law undoubtedly ranks as one of the most-discussed topics of 2020 among legal academics and practitioners (including on this blog). Following initiatives at **WIPO**, the **EPO** and several national IPOs (including the **UKIPO** and the **USPTO**), EU institutions have now also become active in this area. On 20 October 2020, the European Parliament adopted a **resolution** on IP rights for the development of AI technologies. In parallel, on 25 November 2020, the European Commission published a commissioned **study** on challenges posed by AI to the European IP rights framework.

The study, which was carried out by researchers at the **Institute for Information Law (IViR)** [the authors of this post] and the **Joint Institute for Innovation Policy (JIIP)**, examines the state of the art of copyright and patent protection in Europe for AI-assisted outputs in general and in three priority domains: science (in particular meteorology), media (journalism), and pharmaceutical research. The term "AI-assisted outputs" is used in the study to refer to productions or applications generated by or with the assistance of AI systems, tools or techniques. This post focuses on the copyright analysis of the study (for a broader overview of the study, see here).

The use of AI systems in the realms of culture, innovation and science has grown spectacularly in recent years and should continue to do so. AI systems are being used to generate diverse literary and artistic content, including songs, translations, poems, screenplays, novels, photos, paintings, etc., and are making deep inroads into media and journalism. Although these systems have become increasingly sophisticated and autonomous, our study assumes that fully autonomous creation by AI does not yet exist, nor will it exist for the foreseeable future. The study, therefore, views AI systems primarily as tools in the hands of human operators.

AI and EU Copyright Law

For EU copyright law, the study looks into whether AI-assisted outputs qualify as works, at issues of authorship and ownership of AI outputs, at their protection by related rights, and at specific case studies in the areas of automated journalism and meteorology. The analysis is concentrated on the EU copyright *acquis* and its interpretation by the Court of Justice of the EU (CJEU).

Our inquiry into EU copyright law identifies four interrelated criteria to be met for an **AI-assisted output to qualify as a protected "work"**: the output is **(1)** a "production in the literary, scientific or artistic domain"; **(2)** the product of human intellectual effort; and **(3)** the result of creative choices that are **(4)** "expressed" in the output. Whether the first step is established EU law is however uncertain. Since most AI artefacts belong to the "literary, scientific or artistic domain" anyway, and are the result of at least some "human intellectual effort" (however remote), in practice the focus of the copyright analysis is on steps 3 and 4.

Based on a thorough analysis of the CJEU's case law, and in light of the findings of two expert workshops, we conclude that the core issue is whether the AI-assisted output is the result of human creative choices that are "expressed" in the output. In line with the CJEU's reasoning in the *Painer* (C-145/10) case, we distinguish three iterative phases of the creative process in AI-assisted production: "conception" (design and specifications), "execution" (producing draft versions) and "redaction" (editing, finalisation).

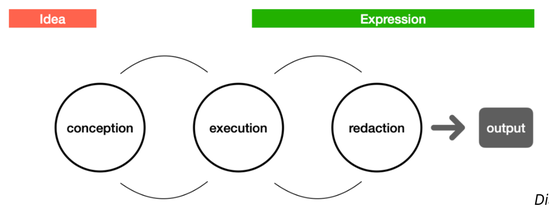

Diagram of an iterative creative process

While AI systems play a dominant role at the execution phase, the role of human authors at the conception stage often remains essential. Moreover, in many instances, human beings will also be in charge of the redaction stage. Depending on the facts of the case, this will allow human beings sufficient creative choice. Assuming these choices are expressed in the final AI-assisted output, the output will then qualify as a copyright-protected work. By contrast, if an AI system is programmed to automatically execute content without the output being conceived or redacted by a person exercising creative choices, there will be no work.

Due to the "**black box**" nature of some AI systems, persons in charge of the conception phase will sometimes not be able to precisely predict or explain the outcome of the execution phase. This, however, need not present an obstacle to the "work" status of the final output, assuming that such output stays within the ambit of the person's general authorial intent.

Depending on (largely unharmonized) national rules on authorship and copyright ownership, authorship status is likely to be be accorded to the person or persons that have creatively contributed to the output. In most cases, this will be the user of the AI system, not the AI system developer, unless collaboration between the developer and user on a specific AI production justifies co-authorship. If "off-the-shelf" AI systems are used to create content, co-authorship claims by AI developers will also be unlikely for commercial reasons, since AI developers will normally not want to burden customers with downstream copyright claims.

A problem that might arise is the possibility of **falsely claiming authorship** in respect of AI productions that do not qualify as "works" for lack of human creativity. Producers or publishers might be tempted to falsely attribute authorship in such productions in order to benefit from the authorship presumptions granted under EU law, which allow the person whose name is mentioned as an author to initiate infringement procedures.

British and Irish copyright law accord authorship status to persons undertaking the arrangements necessary for creating **computer-generated works** in cases where no (human) author can be identified. These provisions have been criticised as being incompatible with EU copyright standards, since "authorless" works do not meet the EU standard of "the author's own intellectual creation". Perhaps they are therefore better understood as a species of related rights.

The **related rights** harmonised under the EU *acquis* offer various possibilities for protecting AI-assisted outputs that do not qualify for copyright protection. In light of the general absence in related rights' law of a requirement of human authorship or originality, and its rationale of rewarding economic or entrepreneurial activity, related rights will accommodate AI-assisted output in cases of insufficient human creative input.

While AI-assisted outputs in the form of aural signals (audio data) may benefit from the phonographic right, audio-visual outputs will qualify for protection under the film producer's right. Moreover, AI-assisted broadcasts may find protection under the related rights of broadcasters. None of these related rights provide for a threshold requirement, making these regimes available for AI-assisted outputs that are generated without any creative human involvement – even absent significant economic investment. In most cases the user, not the developer, of the AI system will be deemed the owner of the related right, since it is the user that triggers the acts that give rise to these rights through his use of the AI system and output generation.

Additionally, databases created using AI will qualify for ***sui generis* protection under the EU Database Directive (96/9/EC)** if the databases are the result of substantive investment. This includes investment in AI technology and know-how applied in producing the database. In light of the broad legal notion of "database", the *sui generis* right potentially offers protection to a wide range of AI-assisted productions. However, it is currently uncertain whether investment in machine-generating data – for example, the generation of weather data with the aid of AI – qualifies as "obtained" rather than "created" data and therefore may be factored in. In any case, the prerequisite of a "database" rules out protection of raw data.

As various **case studies** in the study reveal, it is impossible to make general assessments of the copyright status of AI-assisted outputs in individual cases. In some cases, where the creative role of human beings is evident at various stages of the creative process, such as *The Next Rembrandt* project, the output will most likely be copyright protected. In other cases, where it is difficult or even impossible to identify creative choices, such as automatically-generated sports reports or AI-assisted weather forecasts, copyright protection will be less likely. Note however that this is the same for sports reports and weather forecasts produced without machine assistance. Nevertheless, producers of **"authorless" AI-assisted outputs** might still find recourse in related (neighbouring) rights.

"Authorless" AI-assisted outputs will remain completely unprotected only in cases where no related right or sui generis right is available. Since such rights attach primarily to aural and audio-visual signals, as well as to databases, such cases are most likely to occur if the AI-assisted output is in alphanumerical form. Whether this absence of IP protection might justify regulatory intervention, is primarily an economic question that cannot be addressed in the context of this study (see also here). In any case, such intervention will be justified only if no alternative protection (e.g., under trade secret protection, unfair competition or contract law) is available, and solid empirical economic analysis reveals that the absence of protection harms overall economic welfare in the EU.

Conclusions and Recommendations

The study reaches the following conclusions and recommendations regarding EU copyright law:

- Current EU copyright rules are generally sufficiently flexible to deal with the challenges posed by AI-assisted outputs.
- The absence of (fully) harmonised rules of authorship and copyright ownership may lead to divergent solutions in the national law of distinct Member States in respect of AI-assisted works, which could justify a harmonisation initiative.
- Further research into the risks of false authorship attributions by publishers of "work-like" but "authorless" AI productions, seen in the light of the general authorship presumption in art. 5 of the **Enforcement Directive (2004/48/EC)**, should be considered.
- Related rights regimes in the EU potentially extend to "authorless" AI productions in a variety of sectors: audio recording, broadcasting, audiovisual recording, and news. In addition, the sui generis database right may offer protection to AI-produced databases that are the result of substantial investment.
- The creation/obtaining distinction in the sui generis right is a cause of legal uncertainty regarding the status of machine-generated data that could justify revision or clarification of the EU Database Directive.

Final Remarks

In sum, the study concludes that the current state of the art in AI does not require or justify immediate substantive changes in copyright law in Europe. The existing concepts of copyright law are sufficiently abstract and flexible to meet the current challenges from AI. Producers of AI-assisted outputs also have

access to less demanding regimes, such as related (neighbouring) rights and sui generis database protection.

The main conclusions of the IViR/JIIP study were adopted by the European Commission in the **IP Action Plan** that was submitted to the European Parliament and the Council on the same day the study was published, 25 November 2020.

Part of this blog post is adapted from a previous blog post on the IPKat Blog and available here.