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# Table Of Contents

## Editorial



## Articles

# Editorial

by **Chris Reed***



Recommended citation: Chris Reed, Editorial, 13 (2022) JIPITEC 87 para 1.

**1** By sheer coincidence, this issue of JIPITEC concentrates very much on the challenges which the information technologies continue to pose to IP law. When computing technology began to be widely available and used, in the 1970s and 1980s, IP law's focus was mainly on identifying how digital form could be assimilated into the existing body of the law. Copyright law happily treated digital works as writings or recordings, and (less happily) nuanced its understanding of copying. Patent law took the position that computer programs could never constitute inventions, and then almost immediately began the process of working out how to cope with the fact that most new inventions had some computer program element to them. When the internet arrived in the 1990s copyright law had to be extended to cover the new forms of communication which became available, and is still struggling to work out the boundaries of copyright in a world where digital communication and mass copying and sharing has largely replaced paper and other material forms.

**2** Three of the articles in this issue address the implications of Artificial Intelligence (AI), a recently resurgent technology which presents even more fundamental challenges to IP law. Maurice Schellekens investigates how the use of AI changes the role of the human inventor, and argues that although this technology will change our understanding of inventiveness it does not, at present, present difficulties which patent law cannot cope with. In a similar vein, Rita Matulionyte's detailed analysis of the Australian DABUS case argues that the Australian court was wrong to hold that an AI could qualify as the inventor of a patent, and that human inventiveness needs to remain at the heart of the law. Both, though, recognise that advances in AI may eventually displace the human completely, which will surely require a complete re-examination of the fundamental bases of patent law. Alžběta Krausová and Václav Moravec consider the complete disappearance of the human from authorship of journalism, and investigate the tension between the ethical principles of accountability, responsibility and transparency and the provisions of copyright law.

**3** The exploitation of IP rights is equally affected by the digital technologies. Anthony Rosborough examines copyright in repair manuals, which are commonly shared online and which are needed for purchasers of technology to exercise their rights of repair. This discussion raises questions about the conflict between private rights and the public interest, questions which also arise in the article by Mihail Miller and Stephan Klingner. They undertake an empirical investigation of the practices of collective rights management organisations, and find that the ways in which transparency information is made available are barriers to the public interest aims of the law mandating such transparency.

**4** The extension of IP rights through digitalisation, and the vast increase in communication made possible by the online technologies, have also had a substantial effect on fundamental rights such as free speech and privacy. Evangelia Psychogiopoulou examines how the case law of the CJEU and the ECtHR have influenced each other when considering how to balance these rights.

**5** A common theme in all these articles is the mismatch between the law's fundamental aims, and what it now actually achieves. In 2001 Glynn Lunney published an article in the Virginia Law Review whose opening words were:

> 'Copyright is dead. The Digital Millennium Copyright Act ("DMCA") has killed it.'

**6** His arguments were more nuanced than this, as one might expect, but 21 years later his conclusions seem equally applicable to all the IP rights:

> '... we face a choice both as to how, and more importantly why, we protect creative works.'

**7** In those 21 years the law's focus has mainly been on the 'how' question. The articles in this Issue suggest, to this editor at least, that the challenges to IP

law from the digital and online technologies are now reaching the point when we have also to address the 'why' question.

**Chris Reed, Centre for Commercial Law Studies, Queen Mary University of London**

# Artificial Intelligence and the re-imagination of inventive step

by **Maurice Schellekens***

**Abstract:** Artificial intelligence alleviates the work of the inventor. It may even in a distant future take the place of the human inventor. Legal literature has amply reflected about the implications of AI for the requirement of inventive step. In the literature, much attention has been paid to the algorithms of AI since the role they play seems to be the most similar to that of the human inventor. Although it cannot be completely ruled out that the human inventor will eventually be displaced, it seems to be something for a distant future. This article analyses the implications for the inventive step requirement and concludes that the introduction of a machine-skilled in-the-art as a criterion figure creates many new problems and that in the foreseeable future, existing criteria may function better than is sometimes suggested.

Keywords: patent law; inventive step; artificial intelligence; person-skilled-in-the-art; machine-skilled-in-the-art



Recommended citation: Maurice Schellekens, Artificial Intelligence and the re-imagination of inventive step, 13 (2022) JIPITEC 89 para 1

## A. Introduction

**1** Artificial Intelligence is claiming an increasing role in inventive process. AI promises to find new technical solutions that engineers working from the way they were trained would not so easily arrive at. Inventions made with the help of AI will have little problem meeting the present inventive step requirement, while at the same time the inventive process will be facilitated by the automation that AI brings. At some point, patent law must address the question how to assess inventive step in the context of AI. Unlike other literature that sees especially the algorithms as disruptors, this article emphasizes the role of datasets and how data cause problems for the application of the inventive-step-requirement.[1] This article distinguishes different approaches and asks what their merits and shortcomings are. This article focuses on the inventive step requirement under the European Patent Convention. Other questions relating to the patentability and AI are not addressed.[2]

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1 Ryan Benjamin Abbott, 'Everything is Obvious' (2018) 66 UCLA L. Rev. 2, 42-44 <https://ssrn.com/abstract=3056915> or <http://dx.doi.org/10.2139/ssrn.3056915> accessed 6 December 2021.

2 Literature that addresses other questions comprises: Oliver Baldus, 'A practical guide on how to patent artificial intelligence (AI) inventions and computer programs within the German and European patent system: much ado about little' (2019) 41 E.I.P.R. (12), 750-754, Robin C. Feldman and Nick Thieme, 'Competition at the Dawn of Artificial Intelligence' in Björn Lundqvist and Michael S. Gal (eds), Competition Law for the Digital Economy, Edward Elgar Publishing at 71, UC Hastings Research Paper No. 298 https://ssrn.com/abstract=3218559 accessed 6 December 2021, Celine Castets-Renard, 'The intersection between AI and IP: conflict or complementarity?' (2020) 51 IIC (2), 141-143, W. Michael Schuster, 'Artificial Intelligence and Patent Ownership' (2018) 75 Wash. & Lee L. Rev. 1945 <https://scholarlycommons.law.wlu.edu/wlulr/vol75/iss4/5>, Erica Fraser, 'Computers as Inventors – Legal and Policy Implications of Artificial Intelligence on Patent Law' (2016) 13 SCRIPTed (3) 305 <https://script-ed.org/?p=3195. or DOI: <10.2966/scrip.130316.305>, Heinz Goddar and Lakshmi Kumaran,

## B. Preliminaria

**2** Artificial Intelligence can be defined as:[3]

> Artificial intelligence (hereinafter AI) refers to systems designed by humans that, given a complex goal, act in the physical or digital world by perceiving their environment, interpreting the collected structured or unstructured data, reasoning on the knowledge derived from this data and deciding the best action(s) to take (according to pre-defined parameters) to achieve the given goal. AI systems can also be designed to learn to adapt their behaviour by analysing how the environment is affected by their previous actions.

**3** A special type of AI - machine learning – allows AI to address problems that cannot fully be defined formally or where the reasoning cannot fully described using fully specified formal reasoning rules. Machine learning, along with increased processing and storage capacity of computers, has caused a revival of interest in and applications of AI, such as in Research & Development. Machine learning has a number properties that make it suitable for use in inventive processes.[4] AI may be used to discover relations between data that are not readily apparent. It is able to process large amounts of data that may be hard to process using other techniques. It may itself bring structure in data without the need for a human programmer or data-analyst to create the structure beforehand. This is not just theory, AI has already given rise to inventions. In 2004, NASA had evolutionary software design an antenna that met pre-defined performance parameters.[5] The so-called creativity machine, of Stephen L. Thaler, created food containers that are easily stackable by a robot.[6] In the pharmaceutical industry, AI platforms are regularly used to identify existing medicines that may be effective in curing or alleviating other diseases than the ones for which they were initially developed.[7] In particular, cases where the central idea of the invention is attributable to AI, have given rise to speculations that not humans, but AI should be seen as the inventor and attempts have been undertaken to register an algorithm as the inventor in patent applications. Stephen Thaler applied in various jurisdictions for patents that name AI machine DABUS as the inventor. Is this at all possible in patent law?

## I. Does patent law allow for invention by a machine?

**4** In some jurisdictions, AI may be named as the inventor. Recently, the South African patent office and an Australian court have allowed patents that name an AI as the inventor.[8] Would this also be possible under the European Patent Convention? According to art. 81 European Patent Convention (hereinafter EPC) a European patent application must indicate who the inventor is. Rule 19(1) EPC adds that the application must state the family name, given names and full address of the inventor, and bear the signature of the applicant or his representative. In 2018, a certain Dr. Thaler filed two European patent applications. For these applications, the machine DABUS, a connectionist AI, was indicated as the inventor. The European Patent Office (hereinafter EPO) refused the applications because they failed to mention a natural person as the inventor.[9] That the term 'inventor'

'Patent Law in the Age of AI and IoE. Patent Law based Concepts for Promoting Creation and Sharing of Innovations in the Age of Artificial Intelligence and Internet of Everything' [2019] Les Nouvelles 282-287, R.D. Clifford, 'Intellectual Property in the Era of the Creative Computer Program: Will the true Creator Please Stand Up?' (1997) 71 Tulane Law Review, 1675, B. Hattenbach and J. Glucoft, 'Patents in an Era of Infinite Monkeys and Artificial Intelligence' (2015) 19 Stanford Technology Law Review (32).

3 High-Level Expert Group on Artificial Intelligence, A definition of AI: Main capabilities and scientific disciplines (European Commission, Directorate-General for Communication 2018) p.7 <https://ec.europa.eu/futurium/en/system/files/ged/ai_hleg_definition_of_ai_18_december_1.pdf> accessed 7 December 2021.

4 Daria Kim '"AI-Generated Inventions": Time to Get the Record Straight?' (2020) 69 GRUR International 5, 443–456, Section III. Automation of inventive process: A basic understanding , <https://doi.org/10.1093/grurint/ikaa061> accessed 6 December 2021.

5 J. Bluck, 'NASA 'Evolutionary' software automatically designs antenna', [2004] NASA Release: 04-55AR, <https://www.nasa.gov/mission_pages/st-5/main/04-55AR.html>.

6 D.W. Thaldar and M. Naidoo, AI inventorship: The right decision?, (2021, August 4), p. 2 <https://doi.org/10.31219/osf.io/7uctg>.

7 Peter J. Finnie, 'AI-generated in silico data in patent applications' (2018) 23 Drug Discovery Today (10), 1693-1694, p. 1693.

8 Cases mentioned in D.W. Thaldar and M. Naidoo, AI inventorship: The right decision?, (2021, August 4) <https://doi.org/10.31219/osf.io/7uctg>, p. 2,3. South-Africa: https://www.ipwatchdog.com/wp-content/uploads/2021/07/AP7471ZA00-Notice-of-Acceptance-1.pdf . Australia: Thaler v Commissioner of Patents [2021] FCA 879, https://www.judgments.fedcourt.gov.au/judgments/Judgments/fca/single/2021/2021fca0879 .

9 EPO decisions of 27 January 2020 on applications EP 18 275

should be understood as a natural person is internationally accepted, according to the Office. Moreover, the office argued that the inventor must have legal personality since several rights are attached to the status of inventor. A machine or an AI system would not be able to exercise the rights since it does not enjoy legal personality.

**5** The UK IPO, when confronted with two of Dr. Thaler's applications naming the AI machine DABUS as the inventor, refused the applications too for failure to name a natural person as the inventor.[10] This decision was upheld in appeal by Marcus Smith J.[11] Interestingly, Smith J added that his ruling cannot be interpreted as saying that DABUS would itself not be 'capable of an inventive concept'. In fact, he noted: "[ ... ] I am proceeding on the basis that DABUS has 'invented' the inventions the subject of the Applications."[12]

**6** In conclusion, The European Patent Convention requires that a natural person is mentioned as the inventor in a patent application, but this does not mean that AI cannot invent. Hence, AI may still be the de facto inventor. Nonetheless, it is important to remember that AI can be used in various ways in the inventive process and even if AI plays a creative role, this does not mean that AI can invent without humans or that humans haven't played crucial and creative role too.

## II. Does AI invent without depending on human intervention?

**7** Currently, AI is not able to arrive at inventions completely independent from intelligent human intervention. The life cycle of an AI application illustrates this. In 2019, the OECD defined for the purposes of their Recommendation of the Council on Artificial Intelligence an AI life cycle as follows:[13]

AI system lifecycle: AI system lifecycle phases involve: i) 'design, data and models'; which is a context-dependent sequence encompassing planning and design, data collection and processing, as well as model building; ii) 'verification and validation'; iii) 'deployment'; and iv) 'operation and monitoring'. These phases often take place in an iterative manner and are not necessarily sequential. The decision to retire an AI system from operation may occur at any point during the operation and monitoring phase.

**8** Various steps in the life cycle involve humans in the current state of data science. In a first step, an engineer has to describe an observed problem in a mathematical notation: he has to build a model. A general algorithm may need to be adapted to the model and relevant datasets need to be selected and obtained. Currently these activities require human involvement. In a second stage, the algorithm needs to be trained which also may involve humans. For example, in the so-called supervised learning the algorithm needs to receive feedback on its training runs in order to 'learn' or improve itself. Often such feedback comes in the form data annotated by humans. The annotation allows the algorithm to verify its outputs and adapt its inner workings (such as coefficients and thresholds) to improve its performance.

**9** It appears that currently it is difficult to say whether the creativity is attributable to man or machine. There are different perceptions. In one perception, humans do the creative work of shaping the framework within which the solution to the technical problem can be found and AI only does the dumb work of searching through the solution-area that the humans have defined. In another perception, the AI system comes up with a solution to a technical problem that human engineers would never have arrived at, given their training.[14] In this view, the role of humans is limited to the preparatory work. Elsewhere, the question of who is the inventor and whether there may be co-inventorship has been addressed extensively.[15] For the purpose of this

163 and EP 18 275 174.

10 Janet Strath, 'DABUS is not a person: Patents Court "retires" AI as an inventor' , (2021) 27 C.T.L.R. (1), 10-12.

11 Thaler v. Comptroller of Patents, Designs and Trade Marks [2020] EWHC 2412 (Pat). The Court applied art. 7 jo. 13 UK Patent Act 1977.

12 Thaler v. Comptroller of Patents, Designs and Trade Marks [2020] EWHC 2412 (Pat) at 46.

13 OECD Recommendation of the Council on Artificial Intelligence (OECD, Paris, 2019a) <https://legalinstruments.oecd.org/api/print?ids=648&lang=en> accessed 20 March 2021, p.7. See also OECD *Artificial Intelligence in Society*, (2019) <https://www.oecd.org/publications/artificial-intelligence-in-society-eedfee77-en.htm> accessed 13 March 2021, Chapter 'The technical landscape', Section 'The AI system lifecycle'.

14 Matthias Schneider, speaking at: EPO conference 'Patenting AI', 30 May 2018, Panel discussion 3 'Post-grant aspects of AI-related patents', recording at 23:01 minutes, available under https://e-courses.epo.org/pluginfile.php/23528/mod_resource/content/3/html/page124198.html , last visited 7 December 2021.

15 Robin C. Feldman and Nick Thieme, 'Competition at the Dawn of Artificial Intelligence' in Björn Lundqvist and Michael S. Gal (eds), Competition Law for the Digital Economy, Edward

article it is sufficient to observe that the role of AI in the inventive process becomes larger, irrespective of whether the role is seen as creative or not. As will become clear below, the increasing use of AI raises relevant questions, even if the role of AI would be characterized as only that of a tool in the hands of human inventors.

## C. Inventive step

**10** In patent law, an invention is the result of an inventive step if it is not obvious to a skilled person considering the state-of-the-art. Central to the concept of the inventive step is the criterion figure of the person skilled in the art. According to the Guidelines for Examination, he is defined as 'a skilled practitioner in the relevant field of technology who is possessed of average knowledge and ability and is aware of what was common general knowledge in the art at the relevant date'.[16] The skilled person is also 'presumed to have had access to everything in the "state of the art"'.[17]

**11** Inventive step is assessed using the problem and solution approach. What is obvious, is a cognitive concept. In T-967/97, TBA 3.5.1 decided:[18]

> 3.2. The problem-solution approach is essentially based on actual findings about technical problems and ways to their technical solution, which objectively, i.e. without knowledge of the patent application and the invention to which it relates, were attributable to the knowledge and skills of the skilled person at the priority date.

**12** What is obvious depends on knowledge and ability that can be attributed to the PSITA on the priority date. If, based on the PSITA's knowledge and ability, a direction for a solution offers itself up that has a reasonable expectation of success, then if the solution pans out, the solutions is obvious. If the solution is hard to find because no easy route to a solution presents itself to the PSITA, then the solution apparently involves an inventive step.

**13** Furthermore, the skilled person is presumed 'to have been in possession of the means and capacity for routine work and experimentation which are normal for the field of technology in question.'[19] Hence, a skilled person may not have the very best instruments but only those that are normal in the field. It is likely that some form of AI will become a normal means for routine work and experimentation in many arts.[20] EU Commissioner Vestager aims for example to achieve that 75% of European businesses take up digital solutions such as cloud computing and AI by 2030.[21]

**14** Is patent law open to inventive activity that is at least partially of a non-human origin? To answer this question, we delve in to the rationale for the requirement of inventive step.

## I. What is the rationale for inventive step requirement?

**15** Patent law is based on a quid-pro-quo, a contrat social.[22] Society grants the inventor for limited times exclusive rights in exchange for publication of the invention. The other side of this medal is that no patent should be forthcoming based on a specification that does not add anything new and inventive to the existing public body of technical knowledge. The monopoly that a patent gives must

Elgar Publishing at 71, UC Hastings Research Paper No. 298 https://ssrn.com/abstract=3218559 accessed 6 December 2021.

16 Guidelines for Examination, Part G, Chapter VII, 3, available at: https://www.epo.org/law-practice/legal-texts/html/guidelines/e/g_vii_3.htm last visited 13 March 2021.

17 Guidelines for Examination, Part G, Chapter VII, 3, available at: https://www.epo.org/law-practice/legal-texts/html/guidelines/e/g_vii_3.htm last visited 13 March 2021.

18 T 0967/97 (Chipkarte/OVD KINEGRAM AG) of 25.10.2001, available at: https://www.epo.org/law-practice/case-law-appeals/recent/t970967du1.html last visited 20 March 2021. Unofficial translation of the original German text: '3.2. Der Aufgabe-Lösungs-Ansatz beruht im wesentlichen auf tatsächlichen Feststellungen über technische Aufgaben und Wege zu deren technischer Lösung, die dem Kenntnisstand und Können des Fachmanns objektiv, d. h. ohne Kenntnis der Patentanmeldung und der Erfindung, die sie zum Gegenstand hat, zum Prioritätszeitpunkt zuzurechnen waren.'

19 Guidelines for Examination, Part G, Chapter VII, 3, available at: https://www.epo.org/law-practice/legal-texts/html/guidelines/e/g_vii_3.htm last visited 13 March 2021.

20 Peter Blok, 'The inventor's new tool: artificial intelligence - how does it fit in the European patent system?' (2017) 39 E.I.P.R. (2), 69-73, p. 71.

21 Vestager, "Check against delivery", Speech by Executive Vice-President Vestager at the press conference on Europe's Digital Decade: 2030 Digital Targets, speech 9 March 2021, available at https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_21_1092 last visited 15 March 2021.

22 David Vaver, 'Intellectual property: still a "bargain"?' (2012) 34 E.I.P.R. (9), 579-586, p. 579 contains an inventory of sources for the view that patents are a quid-pro-quo.

correspond to and be justified by its contribution to the art.[23] Thereto, it is not sufficient that an invention for which a patent is sought is new, i.e. not described in full in the state-of-the-art. If the invention is novel, but nonetheless obvious to a person skilled in the art, a patent should not be forthcoming.

**16** From the perspective of the patent as a contrat sociale, it does not matter so much what the relative contribution of the human problem solver and the means for experimentation, such as AI, to the invention are. The invention needs to require more than can be achieved with the skills and knowledge of the skilled person or with normal means of experimentation. The main point is that a patent is granted only for an invention that society does not have at its disposal and that it would not easily obtain. Only if this condition is met, the grant of a patent constitutes an acceptable quid-pro-quo.[24] In this sense, it is in line with the traditional rationale of the inventive step requirement that it should not matter that AI has functioned as the inventor or as a tool. The mandatory disclosure of the inventions as a necessary condition for receiving a patent is an important reason to deem patent protection for inventions by AI desirable.[25]

**17** This may be different if in a distant future the role of the human problem solver is marginalized, and generally available Artificial General Intelligence (AGI) solves new technical problems on its own with the help of freely available datasets. In such a situation, it could be argued that society has the solution to new technical problems as good as at its disposal and patent law may no longer be needed. It is however clear that this is a scenario for a very distant future and given the many uncertainties with which it is surrounded, it does not make much sense to explore this further, since it would be highly speculative.[26]

## II. AI and inventive step

**18** Inventions that a person skilled in the art can arrive at with the help of means for experimentation that belong to his normal toolkit, do not meet the inventive step requirement. To the extent that the means for experimentation become more performant, for example using AI, the nominal person skilled in the art is better versed in the solution of technical problems. This will raise the bar for inventiveness, since inventiveness is that which is beyond the capability of the person skilled in the art, i.e. that which only can be achieved by deployment of the capabilities and means of an inventor. Hence, the bar for inventiveness is raised.

**19** Whether the role of the means, such as AI, is creative or not does not matter so much for inventive step. The following example may illustrate this. If the EU Commission succeeds in its policies to create an environment in which the sharing of data becomes commonplace, a person skilled in the art would likely be found to have more data at his disposal as normal means for experimentation. Even if the models and algorithms underlying the AI programs that a PSITA has at his disposal would not change, the PSITA may become more performant and the bar for inventiveness would rise. However, the mere possession of more data is not creative.

**20** It may seem as if the question how the requirement of inventiveness should be applied does not raise particular problems. However, a larger role of AI requires that AI means that are normal in the art can be distinguished from other, potentially more performant AI means.[27] Can this be done?[28] It will not be too difficult to establish which AI means are used 'normally' in each art. However, it is much less self-evident to obtain a clear picture of the problem-solving capabilities of a normal means if these means involve AI and datasets.

23 Caselaw of the BoA, art. 56 EPC Introduction, available at: https://www.epo.org/law-practice/legal-texts/html/caselaw/2019/e/clr_i_d_1.htm visited 20 March 2021.

24 Chris Dent, 'An exploration of the principles, precepts and purposes that provide structure to the patent system' [2008] I.P.Q. 4, 456-477, p. 462-463.

25 A. Comer, 'AI: Artificial inventor or the real deal?' (2021) 22 North Carolina Journal of Law & Technology (3), 447-486, p. 479-480.

26 For a different perspective, see: S. Yanisky-Ravid and X. Liu, 'When Artificial Intelligence Systems Produce Inventions: The 3A Era and an Alternative Model for Patent Law' (2018) 39 Cardozo Law Review 2215.

27 Ana Ramalho, 'Patentability of AI-Generated Inventions: Is a Reform of the Patent System Needed?' (February 15, 2018) <https://ssrn.com/abstract=3168703> or <http://dx.doi.org/10.2139/ssrn.3168703>, p.24-25 notes that it should be possible to know whether an invention came about with the help of AI and that studying trends in the pertinent industry could provide the answer. She does not explore how to assess inventive step once it has been established that it is normal in the pertinent industry to use AI.

28 Assessing the problem solving capabilities of human problem solvers can already be difficult. Ron A. Bouchard, 'Living Separate and Apart Is Never Easy: Inventive Capacity of the PHOSITA as the Tie That Binds Obviousness and Inventiveness in Pharmaceutical Litigation' (2007) 4 U. Ottawa L. & Tech. J. 1., p. 18-33 shows this for pharmaceutical patents under Canadian patent law.

## D. Approaches to (non-)obviousness

**21** Below, three approaches for assessment of the inventiveness of AI-generated inventions are elaborated: result-based criteria, secondary indicia and a cognitive approach.

## I. Result based criteria

**22** This approach makes use of the automation of the inventive process: by trying to replicate the invention with a reference algorithm and dataset, a precise picture of the non-obviousness of the invention on the filing or priority date may be obtained. This approach has attracted some attention in literature.[29] It is checked whether a reference algorithm – a machine skilled in the art - would be able to arrive at the same or equivalent problem solution as the inventor. If the same or an equivalent invention can be obtained with reference means without undue experimentation, the invention was apparently obvious. It was 'just around the corner' and does not deserve patent protection. The invention was as good as at the disposal of the public on the relevant date. At first sight, this approach holds the promise of a rigorous test for inventive step.[30]

**23** Even though at first sight it may be thought to bring a desired level of precision, it is not as simple as it seems. Assessing inventive step with the help of a reference algorithm raises several issues that are elaborated below. A first issue to address is the selection of the data on which the algorithm would operate. Three options for the selection of data on which the algorithm operates can be derived from patent law. They are elaborated below.

### 1. The reference algorithm operates on same data that the patent applicant used.

**24** This dataset would be the best starting point to compare the merits of different algorithms. Nonetheless, the choice of these data would raise several questions. First, the data used by the applicant, may very well be a specialized data collection. The data collection may and often does contribute to the outcome. Letting the reference algorithm work with the same data as the applicant's algorithm, isolates nicely what the contribution of the algorithm to the inventiveness is, because other conditions are kept unchanged. If the algorithm takes the place of the person skilled in the art and becomes the machine-skilled-in-the-art this would show what the machine-skilled-in the-art can do and what is beyond its capabilities and hence, inventive.

**25** However, in patent law, it does not matter whether inventiveness is the merit of the algorithm or the merit of choosing a large, specialized, information-rich, and non-public dataset. This is no different from invention-by-humans. An averagely able person skilled with means for experimentation that go beyond what is normal in the industry may arrive at inventive solutions for technical problems. Mutatis mutandis, an ordinary algorithm operating on a rich dataset may come up with inventive solutions. If the crux is in the data and the reference algorithm uses the same data as the inventor, it would arrive at the invention and it may seem as if the invention does not involve an inventive step. However, this only occurs because a highly rich and valuable (non-public) dataset is treated as if it belongs to the state-of-the-art or is a normal means at the disposal of the machine-skilled-in-the-art. Hence, it would still be necessary to find out whether there is inventiveness that derives from the dataset.

**26** This approach presumes that the patent applicant makes the dataset he used available for inspection. This may be welcomed by the European Commission, that currently is creating an environment that invites data sharing.[31] For patent applicants however, sharing datasets may make patent law less attractive as an instrument to protect AI inventions, when datasets are used that are non-public and where their non-public nature contributes to the value of the dataset.

29 Ryan Benjamin Abbott, 'Everything is Obvious' (2018) 66 UCLA L. Rev. 2 <https://ssrn.com/abstract=3056915> or <http://dx.doi.org/10.2139/ssrn.3056915> accessed 6 December 2021, p. 42-44. See also Noam Shemtov, speaking at: EPO conference 'Patenting AI', 30 May 2018, Panel discussion 4 'Ethical and societal considerations in relation to AI patented inventions', recording at 19:54 minutes, available under https://e-courses.epo.org/pluginfile.php/23528/mod_resource/content/3/html/page124198.html , last visited 7 December 2021.

30 Hazel V.J. Moir, 'An inventive step for the patent system?' (2013) 35 E.I.P.R. (3), 125-128, p. 126-127 questions the rigor of the current examination of inventive step.

31 The legislation is being updated. Source: Commission, 'A European Strategy for Data' (Communication) COM/2020/66 final, 28 < https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0066&from=EN > accessed 3 December 2021, at p. 3-4.

**27** Perhaps a confidential disclosure of the dataset to the patent examiner may help, but this would immediately raise serious questions about the verifiability of the work of the patent examiner, for example in opposition procedures or before court.

**28** A further drawback of the approach discussed here, would be that it may not be very efficient, to first check whether inventiveness derives from the algorithm and subsequently check whether it derives from the dataset. This is relevant because patent offices look at AI with an eye to make their examination processes more efficient.[32]

**29** In conclusion, the use of the same dataset that the patent applicant used to assess inventiveness with the help of a reference algorithm does raise issues in terms of confidentiality, transparency of the patent examination and efficiency of the same. Therefore, the question arises whether it may be possible to use different datasets.

## 2. Data as a normal means of experimentation

**30** If the reference algorithm takes the place of the person skilled in the art, then reference data may be the means for experimentation that the person, or perhaps in this case, machine skilled in the art normally has at its disposal. The question is how to arrive at such a dataset. If most companies active in an art, work with non-public datasets, it may be difficult to create a dataset that represents a normal, base-level dataset used in the industry. It does not seem impossible either. With the help of experts in the field it may be possible to compose such a dataset. This dataset would then need to become public, so that it can fulfill its function a reference dataset. This presumes that with one dataset multiple technical problems can be resolved in an industry. It is however unclear whether such a general-purpose dataset exists. If each technical problem in an industry requires a bespoke dataset, this approach becomes very inefficient, if not impossible.

## 3. Data as part of the state-of-the-art?

**31** Art. 54(2) EPC defines the state-of-the-art as 'everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application.' Although the state-of-the art may intuitively consist of technical literature, its definition is wider[33] and may also include data, such as patient data. Traditionally, patient data would not give the PSITA much information absent a thorough analysis of the data. Such analysis may require more ingenuity than can be expected from a PSITA. However, with AI on hand, analysis is less of a burden. Hence, mere data can very well be seen as part of the state-of-the-art. If and to the extent that information is seen as state-of-the-art, the PSITA ( or MOSITA) is assumed to have access to everything in the relevant state-of-the-art.[34]

**32** In this approach, the reference dataset would consist of the most relevant data that are publicly available. In this case, there would be no difficulty with confidential or secret data. It may also allow to create a rather large dataset, especially if many data would be available under non-commercial licenses. Theoretically, a large dataset has the effect of heightening the bar for inventiveness. The extent to which this effect occurs, depends on what prove to be the most relevant datasets: the public or the private ones.

**33** A difficult question remains how to compose the reference dataset. With one general dataset for an industry, that can be used for all inventions-by-AI in the sector, a high level of efficiency in assessing inventive step may be achieved. It is not so clear whether this would result in a rather low standard for inventive step. In particular if inventors adapt the datasets they use to the problem at hand, one general reference dataset may constitute a low bar. Theoretically, another option would be to compose a bespoke reference dataset from public data for each invention, but this would probably be too inefficient and give rise to lengthy discussions about what should and should not be included in the dataset. Yet another option would be to include all data that are public in the dataset. The question is whether that would not result in an unacceptably long calculation time.

**34** This approach and the other approaches have as a side-effect that it is worthwhile for companies to create information-rich datasets that are not shared and not part of a reference dataset. That is a way to make sure that the inventive step hurdle can be negotiated relatively easy. It would thus work against the policy of the EC to entice companies to share more data. Here, the idea that sharing data helps the collective European industry forward stands diametrically opposite of the individual interest of a company to create a unique dataset as a strategic advantage in competition and patenting.

32 See for example https://www.epo.org/news-events/in-focus/ict/artificial-intelligence.html under 'AI in EPO Tools'.

33 See T 2101/12 (Authentication binding document with signature/VASCO) of 24.1.2018, at 6.5 to 6.8.

34 T 0426/88 (Combustion engine) of 9.11.1990, at 6.1.

**35** In conclusion, literature about inventive step of AI inventions tends to focus on the algorithm.[35] The data and in particular the selection of the data that the algorithm operates on are at least as important and raise difficult questions.

**36** Also in relation to the algorithm difficult issues may arise. Inventive step is assessed by trying to arrive at the invention with a reference algorithm and a reference dataset. By comparing the outcomes, hopefully something conclusive can be said about the non-obviousness of the invention under scrutiny. The question is to what extent every new problem requires new modelling and adaptation to the algorithm. This may make it difficult to develop an algorithm that functions as a reference. If a more general algorithm delivers weaker results than a tailored algorithm, a general reference algorithm may set the bar for inventive step too low. If a reference algorithm can replicate the invention then this is a strong indication of obviousness. However, if the algorithm does not arrive at the invention, this gives much less information and is probably not usable as a conclusive argument for finding that the invention involves an inventive step.

## II. Secondary indicia

**37** A second approach, to assess the (non-)obviousness of inventions by AI is to allow secondary indicia to play a bigger role in inventiveness.[36] With the secondary indicia, regard is being had to other objective and externally perceptible circumstances often of an economic nature. A prime example of a secondary indicium is the long felt want. A solution for a technical problem is an indicium of inventiveness, if there has been a longstanding need for the solution while nobody appears to have been able to provide a solution despite attempts to find a solution.[37] Another secondary indicium is the one-way street argument. A surprising solution to a technical problem may nonetheless be obvious, if the PSITA would have arrived at the solution in the fullness of time, because the prior art steers the PSITA in the direction of the solution.[38] In the context of AI, if the prior art steers the PSITA towards the use of a certain model, algorithm and dataset and this combination leads to the invention, then the invention is obvious, even if the way in which the invention solves the technical problem is surprising.

**38** Currently secondary indicia have a supporting role in the assessment of inventiveness. The primary test for inventiveness is the problem and solution approach. In literature, the idea has been put forward to give secondary indicia a more prominent role in the assessment of inventiveness, in particular in view of the difficulty of assessing inventiveness of inventions by AI.[39] Secondary indicia most certainly can play a useful role in the assessment of inventiveness of such inventions. The question remains whether sole reliance on secondary indicia for AI inventions is not an admission of weakness. Secondary indicia are merely auxiliary considerations for finding an inventive step.[40] They are mainly relevant in cases where an objective evaluation of inventive step leaves room for doubt.[41] If with some AI cases secondary indicia would be the only criterion because an objective evaluation is not possible, this would be a step backwards. It is the question whether AI changes the assessment of inventive step so drastically that such a step would be necessary. The next section addresses this question.

## III. A cognitive assessment

**39** An invention involves an inventive step, if, given the closest prior art, the PSITA would not arrive at the invention. The PSITA is 'artificial'. It is not a real existing person, but a criterion figure. The knowledge and capabilities ascribed to the PSITA are in essence the general, shared technical experience in a field.

**40** Often inventiveness is based on the effect or result to which the invention gives rise. There is an inventive step if the result or effect is not expected

35 Ryan Benjamin Abbott, 'Everything is Obvious' (2018) 66 UCLA L. Rev. 2 <https://ssrn.com/abstract=3056915> or <http://dx.doi.org/10.2139/ssrn.3056915> accessed 6 December 2021, p. 39-41.

36 Daniele Fabris, 'From the PHOSITA to the MOSITA: will "secondary considerations" save pharmaceutical patents from artificial intelligence?' (2020) 51 IIC (6), 685-708, p.698-703.

37 G. Tritton, R. Davis, M. Edenborough, J. Graham, S. Malynicz and A. Roughton, *Intellectual Property in Europe* (Second Edition, London: Sweet & Maxwell 2002), p.97-98.

38 G. Tritton, R. Davis, M. Edenborough, J. Graham, S. Malynicz and A. Roughton, *Intellectual Property in Europe* (Second Edition, London: Sweet & Maxwell 2002), p. 98-99.

39 Daniele Fabris, 'From the PHOSITA to the MOSITA: will "secondary considerations" save pharmaceutical patents from artificial intelligence?' (2020) 51 IIC (6), 685-708, p. 697-698. For US law, Michael Abramowicz and John F. Duffy, 'The Inducement Standard of Patentability' (2011) 120 YALE L.J. 1590, p. 1603 ff.

40 T 1072/92 of 28.6.1994 at 3.5, 2nd paragraph.

41 T 0877/99 (Refrigerant/DAIKIN) of 31.7.2001 at 3.6.4.

according to the collective experience in the field. Since this criterion looks at the result or effect of an invention, the way in which the invention came about is not of particular importance. This indicates that the criterion is usable irrespective of the way in which the invention came about and in particular, irrespective of the extent to which AI has been used in the process leading up to the invention. If in field X, a synergistic effect is not expected, this remains a valuable insight when assessing inventions having synergistic effects that came about through the involvement of AI.[42] Therewith the existing criteria retain their value, notwithstanding literature that suggests otherwise.[43]

**41** That old criteria do retain their value, does not imply that the application of the criteria is not influenced by a change in the process, such as an increasing reliance on AI. A technical solution in an obvious to try situation (even if there is no particular expectation of success) is usually not inventive. That remains the same with an increasing involvement of AI. However, with AI on hand, many more permutations of (possible) solutions can be tried in an efficient way. Hence, with AI an obvious to try situation may occur more often. Another example are neighbouring fields. A PSITA can be expected to look for a solution in a field neighbouring to that of the invention or in a more general field, if the neighbouring or general fields deal with similar problems and the PSITA can be expected to be aware of that field.[44] If the process leading to the invention makes use of AI, it has to be decided too, which neighbouring or more general fields hold potential for a solution. In fact, because of greater efficiency with which AI can scour a search area, the threshold for considering a field as a potential source for a solution may be lowered. Hence where nominally the same rules are applied the result of application may be different. These examples suggest that the threshold for inventive step would rise. That is only a natural development in a situation in which AI makes inventing easier.

**42** AI may be used to arrive at the invention, while practicing the invention does not involve AI. An example may be NASA's antenna, mentioned above. AI comes up with the design of the antenna, but building an antenna according to the design does not involve AI. In such a case human experts can and will study the design of the antenna and enrich their knowledge of the field. The use of AI does not mean that human expertise stagnates. With expanding knowledge of the field, the threshold for inventiveness rises.

**43** AI may also be part of the invention. An example could be a medication delivery system that based on data about the patient to be treated, calculates a personalized dosage that is optimal for the individual patient. In such a situation, it may not be so easy to see how the invention works. However, application of the invention would most likely require some insight in the way the invention works, either to convince potential users or for compliance with safety or environmental regulations. Although there may be applications that are not so critical that insight in the inner workings of the AI is needed, many will require some form of transparency. It is therefore too early to categorically say that humans skilled in the art have no insight in how AI works and wouldn't be able to assess inventive step.

**44** The cognitive approach may no longer work if in a distant future the inventive process is laid completely in the hands of AI and a collective human understanding of the technical field would disappear because of lack of need for it. It is at present unclear whether such situation will ever occur. Given the present uncertainties about such a situation it is too early to discuss such a situation. Moreover, might such a situation occur then bigger questions than inventive step would need to be addressed first. For example, if AI takes care of inventive processes from A-to-Z, would such mean that the cost of inventing dramatically decreases? If so, would that not open discussions about much profounder adaptations to patent law?

## E. Conclusion

**45** AI can help solve technical problems. The type of support from AI can vary. AI may be a simple instrument in the hands of the human problem solver. AI may also come up with the central idea underlying an invention. Patent law is open to protection of new and inventive technical solutions, also if they arise from the use of AI. In literature, the question has been raised how to assess inventiveness in case AI has been used to arrive at an invention. At first sight, patent law can easily deal with this situation. As ever more sophisticated AI means enter the normal toolkit of the PSITA, the bar for inventiveness will rise automatically. It is also relatively easy to establish what AI means are normally used in an industry. However, it is more difficult to assess

42 T 1814/11 (Synergistische Fungizide Mischung/BASF SE) of 6.2.2013, at 3.5.

43 Daniele Fabris, 'From the PHOSITA to the MOSITA: will "secondary considerations" save pharmaceutical patents from artificial intelligence?' (2020) 51 IIC (6), 685-708, p. 697; Ryan Benjamin Abbott, 'Everything is Obvious' (2018) 66 UCLA L. Rev. 2 <https://ssrn.com/abstract=3056915> or <http://dx.doi.org/10.2139/ssrn.3056915> accessed 6 December 2021, p. 35-37.

44 T 0176/84 (Pencil sharpener) of 22.11.1985, at 5.3.1.

what the capability of normal AI means is. This article distinguishes three approaches. A first approach seeks to define reference AI means. These means can be used to try to replicate an invention, whereby the idea is that if the reference means fail, the invention must be inventive. This approach has attracted attention in literature and on first sight, is also interesting from the perspective of increasing efficiency of the examination processes in patent offices by harnessing the possibilities of AI. This article is critical of this approach. Literature about this approach has focused on reference AI algorithms, but largely ignored the issue of the datasets on which the algorithms operate, even though the data is of critical importance to the problem solving capacity of AI.[45] When seeking to define reference datasets, it appears that values such as effectivity, transparency, verifiability and efficiency may come under pressure, making this approach less attractive. A second approach circumvents the issue by focusing on secondary indications of inventiveness. The question is whether secondary indicia give robust enough results. A third approach, revisits what it actually means that AI is used in inventive processes and how the problem and solution approach is used in practice. It appears that the use of AI does not mean that human involvement is marginalized. A human understanding of what inventive results are does not disappear and can co-evolve with the use of AI. Current means of assessing inventive step remain relevant at least until a general artificial intelligence makes its appearance and that lies in a future that is too far away, to be of current concern.

45 Chr. Hartmann, J.E.M. Allan, P.B. Hugenholtz, J.P. Quintais, and D. Gervais, Trends and Developments in Artificial Intelligence. Challenges to the Intellectual Property Rights Framework. Final Report (Luxembourg: Publications Office of the European Union 2020) <https://www.ivir.nl/publicaties/download/Trends_and_Developments_in_Artificial_Intelligence-1.pdf> accessed 13 March 2021, address the issue of data, but in more limited context.

# AI as an Inventor

## Has the Federal Court of Australia Erred in DABUS?

by **Rita Matulionyte***

**Abstract:** The emergence of advanced Artificial Intelligence (AI) technologies has caused an international debate as to whether inventions generated by AI technology without human intervention should be protected under patent law and who should own them. These questions have been discussed in a recent Federal Court of Australia decision in Thaler v Commissioner of Patents. In that judgment, Beach J recognised that some AI has the ability to autonomously invent and that such AI-generated inventions could be protected under patent law. His Honour held that, in such instances, an AI system could and should be listed as an inventor in a patent application. This article challenges the decision by arguing that, even in the case of the most sophisticated AI systems, these systems are not autonomous in the inventive process as humans provide significant contributions to the very system that leads to the inventive output. Secondly, I contend that the discussion on the need of patent protection for AI-generated inventions (if it were possible at all) is misplaced and not sufficiently comprehensive. Finally, the expanded application of the Patents Act 1990 (Cth), and especially s 15(1), to accommodate 'AI inventors', is an over-reach that is not consistent with the current law. The article recommends that the AI inventorship question should be decided not by courts, but by a policy making body and all interested stakeholders should be engaged in the discussion on this important matter.

Keywords: Artificial Intelligence; DABUS; Inventor



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## A. Introduction

**1** Recent years have seen an increasing international discussion on the intersection of Artificial Intelligence (AI) technologies and Intellectual Property (IP) laws,[1] including the challenges that AI technologies lead to in the area of patent law. One of the most widely discussed questions has been the ability of AI to generate inventions without human contribution (AI-generated inventions) and the need to revise patent laws to accommodate these developments.[2] This question has recently been covered in

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1 See eg Courtney White, Rita Matulionyte, 'Artificial Intelligence Painting a Larger Picture on Copyright,' (2020) 30 *Australian Intellectual Property Review* 224; Russ Pearlman, 'Recognizing Artificial Intelligence (AI) As Authors and Inventors Under U.S. Intellectual Property Law' (2018) 24(2) *Richmond Journal of Law and Technology* 1; Ana Ramalho, 'Will Robots Rule The (Artistic) World? A Proposed Model For The Legal Status Of Creations By Artificial Intelligence Systems' (July 2017) 21(1) *Journal of Internet Law* 12; Tim W Dornis 'Artificial Creativity: Emergent Works and the Void in Current Copyright Doctrine' (2020) 22 *Yale J L & Tech* 1.

2 See W. Michael Schuster, 'Artificial Intelligence and Patent Ownership', (2018) 75 *Wash. & Lee L. Rev.* 1945, Erica Fraser, 'Computers as Inventors - Legal and Policy Implications of Artificial Intelligence on Patent Law' (2016) 13 *SCRIPTed* 305, p 328; Ryan Abbott, 'I Think, Therefore I Invent: Creative Computers and the Future of Patent Law', (2016) 57 *B.C.L.*

several national and international public consultations, including the US Patent and Trade Mark Office (USPTO) consultation on AI and IP,[3] the World Intellectual Property Organization (WIPO) dialogue on AI and IP,[4] the UK consultation on AI and IP,[5] as well as several comprehensive academic reports.[6]

**2** A recent legal development in the area of AI and patent law is the Artificial Inventor Project, the goal of which is to establish that an AI system can be listed as an inventor in patent applications.[7] In 2018, a team of patent attorneys acting on behalf of an AI scientist, Dr Stephen Thaler, submitted two patent applications listing an AI system, DABUS, as an inventor.[8] DABUS, an acronym for 'device for the autonomous bootstrapping of unified sentience', is an innovative AI system created by Dr. Thaler.[9] It is stated that DABUS invented the flashing light and the food container based on fractal geometry that were listed in the disputed patent applications. The two patent applications were initially filed in 2018 in the UK Intellectual Property Office (UKIPO). By operation of the Patent Cooperation Treaty (PCT), the applications were extended to a number of countries, including the US, Germany, Europe, Australia, South Korea, Japan, Israel, Canada, New Zealand, Taiwan and others.[10]

**3** To date, the applications have been rejected by the UKIPO,[11] European Patent office (EPO),[12] German Patent and Trademark Office,[13] US Patent and Trademark Office (USPTO),[14] and Australian Intellectual Property Office (AUIPO).[15] The South African patent office was satisfied that AI could be listed as an inventor in the patent application and has granted the patent,[16] with that decision drawing criticism from a number of commentators.[17]

**4** The applicant appealed unfavorable decisions from the relevant patent offices, with the UK being the

*Rev.* 1079; L Vertinsky and T Rice, "Thinking About Thinking Machines: Implications Of Machine Inventors For Patent Law" (2002) 8 *Boston University Journal of Science & Technology Law* 574-613, p. 586.

3 US Patent and Trade Mark Office 'Public Views on Artificial Intelligence and Intellectual Property Policy' (October 2020), https://www.uspto.gov/sites/default/files/documents/USPTO_AI-Report_2020-10-07.pdf.

4 Issues that are addressed during this dialogue are summarized in WIPO Revised Issues Paper on Intellectual Property Policy and Artificial Intelligence (May 29, 2020), https://www.wipo.int/meetings/en/doc_details.jsp?doc_id=499504 (WIPO Revised Issues Paper).

5 UK Intellectual Property Office 'Government response to call for views on artificial intelligence and intellectual property' (as updated on 23 March 2021), https://www.gov.uk/government/consultations/artificial-intelligence-and-intellectual-property-call-for-views/government-response-to-call-for-views-on-artificial-intelligence-and-intellectual-property (UKIPO Report).

6 See eg Joint Institute for Innovation Policy and IViR-Amsterdam University, 'Trends and Developments in Artificial Intelligence: Challenges to the Intellectual Property Rights Framework', report for the European Commission (2020), https://www.ivir.nl/publicaties/download/Trends_and_Developments_in_Artificial_Intelligence-1.pdf (JIIP/IVIR Report); Drexl J. et al, Artificial Intelligence and Intellectual Property Law: Position Statement of the Max Planck Institute for Innovation and Competition of 9 April 2021 on the Current Debate, https://www.ip.mpg.de/fileadmin/ipmpg/content/stellungnahmen/MPI_PositionPaper__SSRN_21-10.pdf (MPI Report).

7 See Artificial Inventor Project website https://artificialinventor.com/

8 GB1816909.4 and GB1818161.0

9 For more information about the DABUS system see Artificial Inventor Project website https://artificialinventor.com/

10 The up-to-date list of applications and their outcomes is available at https://artificialinventor.com/patent-applications/.

11 UK Intellectual Property Office decision of 04 December 19 – BL 0/741/19.

12 EPO decision of 27 Jan 2020 on EP 18 275 163 and EPO decision of 27 Jan 2020 on EP 18 275 174.

13 Application Numbers: DE 10 2019 128 120.2 & DE 10 2019 129 136.4. Decisions have not been published; information about pending decisions is available at https://artificialinventor.com/patent-applications/.

14 USPTO decision 22 April 2020 re 16/524,350.

15 AUIPO Decision of 9 February 2021 - *Stephen L. Thaler* [2021] APO 5.

16 The patent was published in Patent Journal (July 2021) p 255, available at https://iponline.cipc.co.za/Publications/PublishedJournals/E_Journal_July%202021%20Part%202.pdf

17 See, e.g. Jeremy Smith, 'South Africa issues world's first patent naming AI as inventor, July 29, 2021, https://www.mathys-squire.com/insights-and-events/news/south-africa-issues-worlds-first-patent-naming-ai-as-inventor/'; Joff Wild,'South Africa awards world's first AI-invented patent, but it may not be that big a deal' July 28, 2021, https://www.iam-media.com/law-policy/south-africa-ai-patent-award.

first country where a judicial decision on the matter was handed down. On 21 September 2020, Justice Marcus Smith in the High Court of England and Wales (UK) dismissed Dr Thaler's appeal and upheld the UKIPO decision, confirming that an AI cannot be listed as an inventor because it is a person.[18] More recently, the UK Court of Appeal by majority (Arnold LJ and Laing LJ; Birss LJ dissenting) upheld the judgment at first instance.[19] While all three judges agreed that AI cannot be listed as an inventor, their opinions diverged on whether the Patent Office has sufficient grounds to consider the application as withdrawn. Similarly, in September 2021, Judge Leonie Brinkema in the United States District Court for the Eastern District of Virginia dismissed an appeal by Dr Thaler and upheld the decision of the USPTO, that an AI machine cannot be an inventor under US patent law.[20] Brinkema J referred to the statutory language in the Patent Act (35 U.S. Code) and the recent *America Invents Act 2011* ( such as "individual" and "himself or herself") to hold that an inventor must be a human being.[21] Earlier this year, a similar decision was made by the Intellectual Property and Commercial Court (Taiwan), which ruled that only humans could be inventors.[22]

**5** In this context and with this background, the Federal Court of Australia (FCA) decision in *Thaler v Patent Commissioner*[23] is an international outlier. On 30 July 2021, Justice Beach overturned the primary decision of IP Australia and concluded that AI could be listed as an inventor under the *Patents Act*. It is the first – and so far, the only – court decision internationally suggesting that AI can be an inventor under current patent law.

**6** This paper, after briefly introducing the facts of the case and the arguments advanced by both the Commissioner of Patents and Dr Thaler, respectfully criticizes the Federal Court decision on three main grounds. First, this paper will challenge his Honour Beach J's finding that AI is capable of inventing without human intervention. It will demonstrate that, even in the case of the most advanced AI technologies, such as Artificial Neural Networks (ANN),[24] humans are providing significant contributions to the inventive process at various steps, while machines are simply performing the tasks that are assigned to them, even if in a highly complex and automated way. Secondly, the Court's reasoning in favor of patent law protection for AI-generated inventions (if such autonomous inventions are possible at all), is both misplaced and not sufficiently in-depth or comprehensive. As per Arnold LJ in the UK Court of Appeal, "[courts] must apply the law as it presently stands: this is not an occasion for debating what the law ought to be."[25] Finally, it will be demonstrated that the Australian court failed to adequately reason that the *Patents Act*, and especially section 15, does not create an obstacle in allowing for an AI to be listed as an inventor. It will ultimately be submitted that the interpretation of section 15 was too broad, failed to give sufficient weight to the explicit language of the statute, and was not based on existing legal doctrines.

## B. Facts and findings

### I. IP Australia decision

**7** The PCT patent application listing DABUS as an inventor entered the national phase in Australia on 9 September 2020. After a formalities check, IP Australia issued a direction stating that an inventor must be a natural person and asked the applicant to amend the inventor or provide further comments.[26] In the written submissions, the applicant contended that DABUS can and should be listed as the inventor because the sole contributor to the invention was DABUS itself. Further, the *Patents Act* does not contain a definition of the term 'inventor', and Dr Thaler derived title to the invention under common law principles of accession or first possession.[27] These submissions were rejected by IP Australia.

**8** In a decision handed down on 9 February 2021, IP Australia held that the applicant did not comply with

18 *Thaler v The Comptroller-General of Patents, Designs And Trade Marks* [2020] EWHC 2412 (Pat).

19 *Thaler v The Comptroller-General of Patents, Designs And Trade Marks* [2021] EWHC Civ 1374.

20 *Thaler v. Iancu*, case no. 1:20-cv-00903 (E.D. Va).

21 Ibid.

22 *Thaler v. Intellectual Property Office, Intellectual Property and Commercial Court*, 101 Xin Zhuan Su No. 3 Administrative Decision (**智慧財產及商業法院110年度行專訴字第3號行政判決**), 19 August, 2021.

23 *Thaler* v *Commissioner of Patents* [2021] FCA 879.

24 For a brief explanation of ANN technologies see ‚Neural Networks' https://www.ibm.com/cloud/learn/neural-networks

25 *Thaler v The Comptroller-General of Patents, Designs And Trade Marks* [2021] EWHC Civ 1374, 114.

26 Application no 2019363177, Formalities Report, 21 September 2020.

27 Application no 2019363177, Formalities Response, 19 November 2020, Formalities response 09 December 2020.

the direction under regulation 3.2C(4) to name an inventor who is a natural person and, accordingly, the application was held to have lapsed. The Deputy Commissioner, Dr S.D Barker, concluded that an AI machine cannot be an inventor for the purposes of regulation 3.2C(2)(aa) as this would be inconsistent with the *Patents Act*.[28] The Deputy Commissioner looked at the ordinary meaning of the word 'inventor' and concluded that "I have no evidence whether the ordinary meaning of "inventor", assessed at the present day, can include a machine".[29] The Deputy Commissioner went on to find that the interpretation of 'inventor' as encompassing a non-human would be inconsistent with other provisions of the Act. In particular, such interpretation would be incompatible with section 15(1), which outlines the persons who are capable of being granted a patent.[30]

**9** Pursuant to section 15(1) of the Act, an invention may only be granted to a person who:

(a) is the inventor; or
(b) would, on grant of a patent for the invention, be entitled to have the patent assigned to the person; or
(c) derives title to the invention from the inventor or a person mentioned in paragraph (b); or
(d) is the legal representative of a deceased person mentioned in paragraph (a),
(b) or (c).

**10** The Deputy Commissioner concluded that, since only a person can be a patentee, section 15(1)(a) could not apply in a scenario where AI is an inventor, because "absent devolution, the inventor will have to become the patentee".[31] It was held that section 15(1)(b) is not consistent with treating an AI machine as an inventor because the law does not presently recognise the capacity of an AI machine to 'assign' property.[32] Looking at s 15(1)(c), the Deputy Commissioner identified two ways in which a person can derive title from the inventor – via assignment or via communication – and found that none of them are possible in a given scenario.[33] Finally, it was held that the common law rules of accession or first possession, as relied upon by the applicant, do not apply because they require "conceptually moving title "from" the artificial intelligence machine to the owner of the machine."[34] According to the Deputy Commissioner, since an AI machine is not capable of holding legal title in the first place, such 'conceptual move' of title is not possible.

## II. Federal Court of Australia decision

**11** On 30 July 2021, the Federal Court of Australia handed down its decision, upholding the appeal. Beach J, in a decision of some 228 paragraphs, set aside the Deputy Commissioner's determinations and remitted the matter for reconsideration.[35]

**12** By way of introduction, Beach J discusses, *inter alia*, the functioning of artificial neural networks (ANN), the technology that underlies the DABUS system, its similarity in function to a human brain, and its capability to make autonomous decisions.[36] His Honour further discusses, at length, the increasing importance of innovative AI technologies, especially in the pharmaceutical industry.[37]

**13** The analytical section of the decision is structured into four sections. In the first section ('General observations') Beach J observes that none of the provisions in the *Patent Act* expressly refute the proposition that an AI system can be an inventor. His Honour then states that the word 'inventor' is an agent noun, similar to other agent nouns such as "computer", "lawnmower" and "dishwasher", where an agent can be a person or a thing.[38] Beach J suggests that the concept of 'inventor' should be seen in a flexible and evolutionary way, similar to the concept of 'manner of manufacture', the widening of which "is a necessary feature of the development of patent law in the twentieth and twenty-first centuries as scientific discoveries inspire new technologies".[39]

**14** It was held that a broad construction of the term 'inventor' would be consistent with the objects of the *Patents Act* to promote "economic wellbeing through technological innovation and the transfer and dissemination of technology"[40]. His Honour stated

28 *Stephen L. Thaler* [2021] APO 5, [1].

29 Ibid [6], [7], [12].

30 Ibid [26-33].

31 Ibid [20].

32 Ibid [26].

33 Ibid [27-28].

34 Ibid [30].

35 *Thaler* v *Commissioner of Patents* [2021] FCA 879 [10].

36 Ibid [19-43].

37 Ibid [44-56].

38 Ibid [120].

39 Ibid [121].

40 S 2A Patent Act 1990, *Thaler* v *Commissioner of Patents* [2021] FCA 879 [124].

that "computer inventorship would incentivise the development by computer scientists of creative machines, and also the development by others of the facilitation and use of the output of such machines, leading to new scientific advantages".[41] Arguably, computers have been autonomously or semi-autonomously generating inventions for some time, and "[n]ot recognising the reality could produce inefficiency if not logical difficulties, which would be the antithesis of the s 2A object."[42]

**15** In the second section ('Dictionary definitions') Beach J found the Deputy Commissioner's reliance on dictionary definitions as problematic[43] and concluded that "dictionaries are not a substitute for statutory interpretation, and the application of a dictionary definition in place of the words in the statute can lead to error by introducing requirements not contained in the statutory text".[44] His Honour explained that definitions of words are changing historically over time.[45] Arguably, this suggests that dictionary definitions of 'inventor' do not necessarily express the current or emerging meanings of the word.

**16** The third section of his Honour's analysis focuses on section 15 of the *Patents Act*, which loomed large in the decision of the Deputy Commissioner. His Honour agreed that patents can only be granted to persons, that only persons can apply for a patent, and that AI systems cannot own or legally assign an invention.[46] However, in his Honour's view, this does not lead to a conclusion that section 15 precludes an AI system being listed as an inventor. [47] First, his Honour states that "it is a fallacy to argue from s 15(1)(a) that a non-human, indeed a non-person, cannot be an inventor. It could be, but it could not be granted a patent." [48] Second, with relation to s 15(1)(b), that refers to a person 'entitled to have the patent assigned' to them, Beach J states that an entitlement and any assignment could arise not only by agreement but also by conduct, informally, or by operation of law.[49] Beach J accepted the accession, or first possession, principles advanced by the applicant. According to the common law principle of accession (or first possession), the owner of the existing tangible property (eg an apple tree) would become an owner of the outputs generated by that property (eg apples).[50] Applying this principle, Beach J held that Dr Thaler would be the owner of the patent because he is the owner, programmer, and operator of DABUS.[51] Similarly, when applying s 15(1)(c) of the Act, the court held that "the concept of derivation is broad and is not limited to assignments or any transfer of title as such"[52] and that "Dr Thaler prima facie falls within s 15(1)(c) because he has derived title to the invention from the inventor, DABUS" as a result of his ownership and possession of the invention.[53]

**17** In the final section of the analysis ('Miscellaneous statutory provisions and other matters') his Honour agreed that s 172(1), 182(3) and 185(a) predicate that the inventor, in the context in which they dealt with, is a person. However, "the fact that the Act stipulates rights or consequences for an inventor who is a person in some places does not logically entail that an inventor must be and can only be a person for all purposes."[54]

## C. Comment and critique

**18** The decision in *Thaler v Commissioner of Patents* provides an interesting and unique contribution to the discussion on AI-generated inventors and patent law. It is unique from a number of perspectives. It is the first decision to date that describes AI technology in detail and holds that AI is capable of autonomous invention and patent protection for AI-generated inventions. It is also unique in that it is the first, and so far, the only court decision that provides a broad interpretation of the 'inventor' concept under Australian patent law, which would include AI machines as possible inventors.

41 *Thaler* v *Commissioner of Patents* [2021] FCA 879 [125].

42 Ibid [127-129], 129, citing Ryan Abbott, 'I Think, Therefore I Invent: Creative Computers and the Future of Patent Law' (2016) 57(4) *Boston College Law Review* 1079, 1103 to 1104.

43 Ibid [147].

44 Ibid [153].

45 Ibid [152] ('dictionaries are by their nature developed from historical usage').

46 Ibid [158].

47 Ibid [158], [165].

48 Ibid [160].

49 Ibid [161].

50 For a more detailed discussion of this doctrine see *Thaler v The Comptroller-General of Patents, Designs And Trade Marks* [2021] EWHC Civ 1374, at 30.

51 Ibid [167].

52 Ibid [162].

53 Ibid [177].

54 Ibid [212].

**19** However, it is respectfully submitted that the judge's decision is certainly open to challenge. This paper will challenge the three contentions made by the court: first, that AI is capable of autonomous invention; second, that AI-generated inventions should be patentable; and third, that an expansive interpretation of 'inventor' is compatible with section 15 of the *Patents Act 1990*.

## I. AI is capable of autonomous invention

**20** The first argument challenges the proposition by Beach J. that AI is capable of autonomous invention. According to Beach J, "machines have been autonomously or semi-autonomously generating patentable results for some time now".[55] This statement suggests that there is generally no doubt about the ability of AI to invent, and that such inventions are not entirely new and have been generated for a while. Whilst that is an important factual question, it is noted that it was not a question that was determined by IP offices or courts overseas that have decided the case on similar facts.[56]

**21** The arguments that the court uses to prove AI's ability to invent autonomously, however, are open to question. First, his Honour suggests that artificial neural networks (ANN), a type of a machine learning algorithm that was used in developing the DABUS system, are very similar in their workings to natural neural networks found in a human brain. [57] As a human brain is capable of independently inventing, this comparison seems to imply that ANN should similarly be able to invent. Secondly, the court argues that the ANN technology underlying DABUS is essentially autonomous, i.e. it is a 'self-assembling', 'self-organizing' system that is capable of generating novel patterns and adapting to new scenarios without additional human input.[58] Finally, the court "pose[s] some questions and make[s] some assumptions:"[59]

> *"Who sets the goal for the system? The human programmer or operator? Or does the system set and define its own goal? Let the latter be assumed. Further, even if the human programmer or operator sets the goal, does the system have free choice in choosing between various options and pathways in order to achieve the goal? Let that freedom also be assumed. Further, who provides or selects the input data? Let it be assumed that the system can trawl for and select its own data.(...)."*[60]

**22** His Honour concludes: "Making all of these assumptions, can it seriously be said that the system is just a brute force computational tool? Can it seriously be said that the system just manifests automation rather than autonomy? (...) [I]t would seem to me that such a system could at least be described as semi-autonomous if not autonomous."[61]

**23** The analysis below demonstrates that the reasoning adopted by the court does not convincingly establish that AI generally, or ANN more specifically, is capable of autonomous invention. The arguments are flawed from at least three perspectives.

### 1. Anthropomorphic rhetoric is inappropriate

**24** First, by repeatedly drawing a parallel between the human brain and ANN technology[62] the court is engaging into anthropomorphic rhetoric. Experts warn that while the analogy between ANN and the human brain might be 'helpful when explaining complex models to audiences with minimal background in statistics and computer science'[63]', it might also be

55 Ibid [126].

56 UK Intellectual Property Office decision of 04 December 19 – BL 0/741/19 [15] ("Office practice is to accept that the indication of inventors at face value, and that it is up to others to challenge the veracity of such an indication"), see similar approach in USPTO decision 22 April 2020 re 16/524,350, p 6.

57 *Thaler* v *Commissioner of Patents* [2021] FCA 879 [19-29] (e.g. ANN "self-organise to simulate the way in which the human brain processes and generates information" and "has the ability of the network to learn from experience").

58 *Thaler* v *Commissioner of Patents* [2021] FCA 879 [41] ("DABUS could be described as self-organising as a cumulative result of algorithms collaboratively generating complexity. DABUS generates novel patterns of information rather than simply associating patterns. Further, it is capable of adapting to new scenarios without additional human input. Further, the artificial intelligence's software is self-assembling. So, it is not just a human generated software program that then generates a spectrum of possible solutions to a problem combined with a filtering algorithm to optimise the outcome.")

59 Ibid [126].

60 Ibid [127].

61 Ibid [128].

62 See e.g., such terms as 'memories', 'learn from experience' used by Beach J throughout the introductory section.

63 David Watson, 'The Rhetoric and Reality of Anthropomorphism in Artificial Intelligence' 29 *Minds & Machines* 417-440, 434 (2019).

'misleading and potentially dangerous'.[64] Here, this analogy is employed to indirectly suggest that ANN is capable of autonomously generating new ideas in the same way as human brain, and therefore should be eligible for an inventor status. However, as discussed below, it is very doubtful that ANN, or AI technologies in general, enjoy the same or even a similar amount of autonomy as a human brain does. Thus, the analogy between a human brain and ANN technology is not helpful; rather, it provides a distorted picture of ANN technologies by implying 'autonomous' thinking, learning, and idea-generating features which they do not actually possess. Furthermore, the description of ANN technologies does not mention a human role in designing the technology and human influence on the idea generation, the point that will be developed in subsequent sections.

## 2. There is no sufficient evidence that ANN or DABUS are 'autonomous'

**25** Second, the argument that ANN in general and DABUS specifically are autonomous system that are capable of 'self-assembling', 'self-organizing' and developing new ideas 'without human input' is also open to challenge.

**26** As far as ANN in general is concerned, experts suggest that humans play an essential role in designing AI systems, such as ANN, and in this way significantly contribute to the inventions or other outputs generated by such systems.[65] Human involvement in designing the AI system could be structured as follows: problem formulation; abstraction and modelling; the design of an algorithm; programming; data manipulation; execution; and interpretation and communication of results.[66] In each of these steps, humans have an indispensable role. Before any AI system is developed, humans set the computational problem that the system is going to address. Humans then reduce that problem "to a set of essential characteristics for a particular modelling purpose"[67]. As a next step, they develop "an effective procedure to solve a given problem, that is, a finite sequence of elementary and totally explicit (well defined and not ambiguous) instructions",[68] that are known as an 'algorithm'. Further, humans develop the data set that is then used and manipulated to train the algorithm. After the algorithm is trained, humans set a task to produce outputs that the AI module executes using the module developed by human. Finally, humans choose which outputs to select and communicate. Thus, according to commentators, notwithstanding the complexity of the algorithm, 'the computers simply contribute to problem solving by 'crunching numbers' obediently, and it is by 'brute force computation' that they can outperform humans" (footnotes omitted).[69]

**27** For example, in the *Tencent* case[70] which was decided by a Chinese court, the defendant argued that the algorithm, Dreamwriter, autonomously produced the disputed media article and, therefore, the plaintiff did not own it. However, the Chinese court accepted the plaintiff's argument that human originality could be found in various phases of Dreamwriter's creation of the article. The court explained that, although it only took Dreamwriter two minutes to produce the disputed article (which was the result of the software's operation of established rules, algorithms, and templates without any human participation), the automatic operation of Dreamwriter did not occur without a reason.[71] It was noted that the software was not self-aware.[72] Instead, Dreamwriter's autonomous operation reflected its developers'

64 Ibid; see also Daria Kim, "AI-Generated Inventions': Time to Get the Record Straight?', (2020) 69(5) *GRUR International 443*, 444.

65 Kim (n 62) 449; Max Planck Institute for Innovation and Competition, 'Artificial Intelligence Systems as Inventors? A Position Statement of 7 September 2021 in view of the evolving case-law worldwide', available at https://www.ip.mpg.de/fileadmin/ipmpg/content/stellungnahmen/MPI_Position_statement_AI_Inventor_2021-08-09.pdf

66 Kim (n 62) 449.

67 Government Office for Science, 'Computational Modelling: Technological Futures' (2018) 112 <https://assets.publishing.service.gov. uk/government/uploads/system/uploads/attachment_data/file/682579/computational-modelling-blackett-review.pdf> accessed 3 March 2020; see also Kim (n 62) 449.

68 Massimo Marraffa and Alfredo Paternoster, 'Models and Mechanisms in Cognitive Science' in Lorenzo Magnani and Tommaso Bertolotti (eds), Springer Handbook of Model-Based Science (Springer 2017) 929, 930.

69 Kim (n 62) 450-451; See also Tom Taulli, Artificial Intelligence Basics: A Non-Technical Introduction (Apress 2019) 66. ("Even ANN algorithms, that are not explicitly programmed in a conventional sense, do not run without precise instructions. They leverage mathematical and statistical methods to solve the problem, namely, their computational operations are guided by formulas, equations, functions, etc. that constitute a part of an algorithm.").

70 *Tencent v. Shanghai Yingxun Technology Co. Ltd*, People's Court of Nanshan (District of Shenzhen) (深圳市南山区人民法院(2019)粤0305民初14010号民事判决), 24 Dec 2019.

71 Ibid.

72 Ibid.

personalised selection and arrangement of data type, data format, the conditions that triggered the writing of the article, the templates of article structure, the setting of the corpus, and the training of the intelligent verification algorithm model.[73]

**28** With relation to DABUS, it is currently not clear to which extent humans have been involved in the development of DABUS and to which extent they contributed to the outputs generated by this AI system. Interestingly, the description of both ANN and the functioning of DABUS found in the Judgment (intentionally or otherwise) entirely ignores the human contribution to the AI development and functioning processes. Throughout the descriptive introduction consisting of 24 paragraphs[74], the court made no mention of the AI developer or Dr Thaler who developed the DABUS technology. However, it is inappropriate to ignore the developer's role in designing DABUS and their contribution to the final outputs. Presuming that Dr Thaler is the only person involved in the development of DABUS, it is reasonably assumed that Dr Thaler was the person who formulated the problem to be solved by the system, abstracted it for modeling purposes, developed a complex algorithm consisting of multiple layers of neural networks, introduced many new features in the algorithm,[75] created the training dataset, and used it to train the algorithm as a part of supervised learning.[76] Before DABUS arrived at the two inventions claimed in the patent applications, it is likely that Dr Thaler had provided certain instructions that were then carried out by the algorithm.[77] Finally, it is uncertain what role Dr Thaler played in the interpretation and communication of any outputs produced by DABUS. While the applicant argues that DABUS was the first to identify the novel idea,[78] commentators have criticized this contention suggesting that humans are required for the interpretation and communication of results.[79]

**29** Overall, there is a paucity of evidence as to what role humans played in the development of DABUS and in generating its outputs. If the court had identified human contribution at different stages of the AI development and output generation, its conclusion on the autonomous nature of DABUS might have been different.

## 3. Assumptions are insufficient to prove autonomous nature of AI

**30** Finally, the assertion by the judge that "machines have been autonomously or semi-autonomously generating patentable results for some time now" may not withstand scrutiny. The 'questions and assumptions' argument employed by the court, as cited above,[80] arguably, are neither logical nor convincing. The assumptions that the court makes about the capabilities of AI systems in general – that the AI system sets a goal for itself, that the system has a freedom to choose between various options and pathways in order to achieve the goal, that the system can trawl for and select its own data – do not receive support from the technical literature. The technical literature suggests that humans not only set the goals to the system but also design features and parameters on how the system should reach the set goals.[81] According to commentators, even with relation to sophisticated techniques such as ANN, human decision making plays an essential role in applying them to a problem at hand.[82] Thus, while the system might be programmed to search for and select its own data, it would do it only in accordance with clearly set parameters. Similarly, while the system might randomly choose between different pathways to achieve the goal, those options and pathways

73 Ibid.

74 See *Thaler* v *Commissioner of Patents* [2021] FCA 879 [19-43].

75 Ibid [42] and [36] (refer to algorithmic innovations introduced by the AI developer; see, respectively, "DABUS, and its underlying neural paradigm, represents a paradigm shift in machine learning" and "including 'random disturbances' that promote the formation of alternative chaining topologies").

76 *Ibid* [37].

77 Instead of explaining different contributions by Dr Thaler, the court simply concludes 'Finally, an output of the process described above is the alleged invention the subject of Dr Thaler's application', see *Thaler* v *Commissioner of Patents* [2021] FCA 879 [43].

78 *Stephen L. Thaler* [2021] APO 5 [1].

79 Kim (n 62) 455.

80 See discussion above at III.A.

81 See Fraser (n 2) p 315 ('With the present state of Al technology, however, human ingenuity is still necessary to define targets, parameters and success criteria'), 323; see also R Plotkin, *The Genie in the Machine: How Computer-Automated Inventing is Revolutionizing Law & Business* (Stanford: SUP, 2009), at 57-58; E Knorr, "Origin of the Patents" (2001) *MIT Technology Review* available at https://www.technologyreview.conms/401134/origin-of-the-patents/ .

82 Drexl et al, Artificial Intelligence and Intellectual Property Law Position Statement of the Max Planck Institute for Innovation and Competition of 9 April 2021 on the Current Debate, pp 23-24, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3822924.

have been set by programmers or other human contributors to the AI system.[83]

**31** Overall, the court's proposition that AI can autonomously invent has not been supported by sufficient evidence. Further facts are required to determine the exact nature and scope of contributions made by the designer of the system. These are likely to demonstrate that human contribution is instrumental for an AI module to generate the desired outputs.

## II. AI-generated inventions should be patentable

**32** The next proposition that underlies the court's decision, is that inventions autonomously generated by AI (if they are possible at all) should be patentable in the same way as human inventions.[84] The question whether AI-generated inventions should be patented has been broadly discussed in various jurisdictions and among different stakeholders without reaching an overall consensus.[85] Whilst patent offices and courts that have dealt with this case have avoided discussing this policy question,[86] Beach J expressed his views clearly.

**33** His Honour held that AI-generated inventions should be patentable for two main reasons: 1) this would encourage innovation that the *Patents Act* (and the Objects provision) is designed to promote;[87] and, 2) patent protection would encourage the disclosure of inventions to society which would otherwise be kept secret.[88] In addition, Beach J discounts the possible risks of such protection, such as proliferation of patent applications.[89] Whilst some of the reasoning provided by the court might hold truth, it is submitted below that the discussion is not comprehensive and, thereby, not persuasive as it does not assess all of the reasons and possible impacts of such a policy decision on various private and public interests. It is argued that it would be more appropriate to discuss and address this policy question at a political level involving all relevant stakeholder groups.

### 1. It is uncertain whether patentability of AI-generated inventions will lead to more innovation

**34** First, the court reasons that listing AI as an inventor, and thus allowing patents over AI-generated inventions, is consistent with the objects of the *Patents Act* to incentivize innovation.[90] Arguably, allowing patents over AI-generated inventions would incentivize computer scientists to develop inventive machines and others to facilitate the production and use of outputs produced by such machines, which would then contribute to the economic wellbeing of the society. [91]

**35** Stimulation of innovation is a primary rationale of patent law[92] and, at first instance, this argument might sound convincing. Indeed, for some industries which require immense investment to innovate, such as the pharmaceutical industry, patent protection might be instrumental in promoting investment.[93]

83 See similar Fraser (n 2) 323.

84 *Thaler* v *Commissioner of Patents* [2021] FCA 879 [124].

85 See eg US Patent and Trade Mark Office 'Public Views on Artificial Intelligence and Intellectual Property Policy' (October 2020), https://www.uspto.gov/sites/default/files/documents/USPTO_AI-Report_2020-10-07.pdf. WIPO Revised Issues Paper on Intellectual Property Policy and Artificial Intelligence (May 29, 2020), https://www.wipo.int/meetings/en/doc_details.jsp?doc_id=499504; UK Intellectual Property Office 'Government esponse to call for views on artificial intelligence and intellectual property' (as updated on 23 March 2021), https://www.gov.uk/government/consultations/artificial-intelligence-and-intellectual-property-call-for-views/government-response-to-call-for-views-on-artificial-intelligence-and-intellectual-property.

86 For instance, the EPO, when confronted with this argument, avoided commenting on this policy issue and simply repeated that the formal requirement to state an inventor who is a natural person should be met. EPO decision of 27 Jan 2020 on EP 18 275 163 and EPO decision of 27 Jan 2020 on EP 18 275 174, para 37.

87 *Thaler* v *Commissioner of Patents* [2021] FCA [122-125].

88 *Ibid* [130].

89 *Ibid* [133].

90 S. 2A Patent Act 1990 (the object of the Patent Act is to "promote[...] economic wellbeing through technological innovation and the transfer and dissemination of technology (...).".

91 *Thaler* v *Commissioner of Patents* [2021] FCA [125]; See similar Fraser (n 2) 326 ("On its face, widening patentability to include inventions generated autonomously by computers would provide an incentive that would accelerate innovation and generate exponentially more inventions quicker, while requiring less skill and fewer resources than would otherwise be possible"), see also B Hattenbach and J Glucoft, "Patents In An Era Of Infinite Monkeys And Artificial Intelligence" 9 *Stanford Technology Law Review* 32 (2015)

92 Fraser (n 2) 321-322; R Plotkin (n 80) 130.

93 See, e.g. Henry Grabowski, 'Patents, Innovation and Access to New Pharmaceuticals', 2002 5(4) *Journal of International*

Similarly, it could be argued that if AI-generated outputs cannot be patented and would simply fall into public domain, individuals or companies would not be motivated to invest in developing AI systems in the first place.

**36** On the other hand, the ability of patent law to stimulate innovation has been repeatedly challenged, which suggests that patent law's ability to encourage innovation in AI sector is not without doubt either. For instance, some economists have previously suggested that there is no clear empirical evidence on whether the patent system encourages innovation.[94] Others have argued that patents might even impede innovation in certain sectors, such as the software industry, or may preclude small and medium sized companies from entering markets that are thick with patented technologies.[95] Therefore, scholars argue that IP rights should be granted only when there is a clear market failure.[96] These general arguments could be used in challenging the proposition that patent law protection for AI-generated inventions (if they were possible in the first place) is required to ensure the growth of AI industries.[97]

**37** In addition, patent law is not only about incentivizing innovation and economic prosperity (the utilitarian rationale reflected in S2A Patents Act) but also about recognizing and rewarding human ingenuity.[98] International human rights instruments require countries to protect "moral and material interests resulting from any scientific, literary or artistic production of which he is the author".[99] Whilst this does not prevent states from developing patent laws that also protect non-human innovation, the question arises of how awarding an AI system with inventor status will affect human innovation and the protection of human rights and interests in the innovation process. Some have argued that allowing patents over AI-generated inventions (as opposed to AI-assisted inventions) may undermine human inventorship, the role that humans play in innovation, as well as their recognition and reward under patent law.[100]

**38** While this proposition would require further investigation, one point needs to be emphasized here. As argued above, humans invest a significant amount of intellectual effort in designing the AI modules, their tasks, and the ways they must perform those tasks. In short, humans make a very significant and important contribution to the outputs generated by AI. If those human contributors are not acknowledged and rewarded for the outputs produced by AI, it is questionable whether that would be compatible with international human rights instruments requiring the protection of moral and material interests of humans resulting from their scientific endeavours.

## 2. Absence of patentability will not necessarily result in secrecy

**39** Further in its reasoning, the court stated that "[w]ithout the ability to obtain patent protection, owners of creative computers might choose to protect patentable inventions as trade secrets without any public disclosure."[101]

**40** Disclosure of an invention to the public is one of the central tenets of the patent law system. Disclosure stimulates and incentivizes further innovation, reduces duplication, and enables effective investment in innovation.[102] That said, one should recognize that trade secret protection, or the protection of confidential information, is limited in a number of ways, and might not be available to at least some AI-generated inventions.[103] For example, trade secret pro-

*Economic Law* 849.

94 See, e.g. *Boldrin*, Michele and *Levine*, David K. and *Levine*, David K., The Case Against *Patents*. Michele *Boldrin* and. David K. *Levine*, Working Paper *2012*-035A http://research.stlouisfed.org/wp/2012/2012-035.pdf.

95 With relation to software patents, see William M. Landes & Richard A. Posner, The Economic Structure of Intellectual Property Law 312–13 (2003).

96 Drexl et al (n 6) para 16.

97 It is interesting to note that all examples of AI applications that Beach J mentions in the context of pharmaceutical industry concerns situations where AI is used as a tool to assist in innovation process rather than as a device capable of autonomous invention, see *Thaler* v *Commissioner of Patents* [2021] FCA 879 [ 44-57].

98 See 'moral' rationale of IP rights discussed in Stewart et al, Intellectual Property Law in Australia (6th ed Lexis Nexis 2018) [1.30].

99 Art 27(2) of the United Nations Universal Declaration of Human Rights, 10 December 1948.

100 For a brief discussion see Abbott (n 2) 1117-1121.

101 *Thaler* v *Commissioner of Patents* [2021] FCA 130; see also Abbott (n 2) 1103-1104.

102 Fraser (n 2) 322; see also B Roin, "The Disclosure Function of the Patent System (or Lack Thereof)" (2005) 118 *Harvard Law Review* 2007-2028, at 2009.

103 *see* Katarina Foss-Solbrekk, 'Three routes to protecting AI systems and their algorithms under IP law: The good, the bad and the ugly'*, Journal of Intellectual Property Law and Practice* 2-3 (2021), at 12; Ana Nordberg, 'Trade secrets, big data

tection affords no protection against reverse engineering.[104] The inventions generated by DABUS – the fractal container and the signal light – could be easily reverse engineered when they reach the market, whereby the owner, wishing to commercialize these inventions, would not be able to rely on trade secret protection. If a patent is not granted in such situations, the owner would have to rely on other forms of protection (e.g. consumer and competition laws, contracts) and develop commercialization strategies that do not rely on exclusive rights.

**41** As a result, absence of patent protection for AI-generated inventions will not necessarily result in all such inventions being protected by trade secrets that might last for indefinite period of time, as envisaged by the court. Due to limited scope of trade secret protection, some inventions, including the ones generated by DABUS, would not be able to benefit from trade secret protection and thus would be disclosed to the public as soon as they are released on the market. This suggests that, instead of leading to more secrecy, the absence of patent protection for AI-generated inventions might lead to earlier disclosure of invention to the public, at least with relation to certain inventions, which might further encourage innovation and competition in the field.

## 3. Not all risks have been taken into account

**42** Justice Beach addressed some of the concerns relating to patenting computer-generated inventions. For instance, his Honour made reference to a submission that if these AI patents are permitted, the patent system will potentially reach breaking point simply because the algorithms will produce innumerable novel inventions.[105] His Honour 'dispose[s] of these phantoms' by proffering that only a legal person can make a patent application and be granted a patent. Therefore, this legal person will have the ultimate control and title over a patented invention.[106]

**43** Whilst the court is correct to suggest that AI will not be able to autonomously apply to patent the inventions it generates, that is not a satisfactory answer to a broader possible challenge to which the court is referring. Namely, autonomous systems could create thousands of inventions in a small field, potentially resulting in a concentration of patent ownership by those with access to those systems.[107] This could make it difficult (if not impossible) for competing companies (especially SMEs) to enter the field, resulting in a stifling of innovation.[108] These issues have not been identified by the judge but they ought to be considered when developing patent law policy around new type of inventions, such as those generated by AI.

**44** Further, the judgment does not address multiple other challenges that patenting AI-generated inventions might cause. Commentators have suggested that computer-generated inventions would have a negative effect on human inventiveness and may eliminate high-quality R&D jobs or entire R&D industries.[109] The acceleration of innovation through autonomous inventing machines might arguably lead to the disruption of the innovation cycle, while an increasing number of computer-generated inventions could accelerate natural resource consumption.[110] Others have argued that, from an economic perspective, the availability of patents for inventive machines would be a sufficient incentive as they

and artificial intelligence innovation: a legal oxymoron?', in Jens Schovsbo, et al (eds), *The Harmonization and Protection of Trade Secrets in the EU: An Appraisal of the EU Directive*, 210 (2020), at 212.

104 See, e.g., Nari Lee, 'Protection for artificial intelligence in personalised medicine – the patent/trade secret tradeoff', in Jens Schovsbo, et al (eds) *The Harmonization and Protection of Trade Secrets in the EU: An Appraisal of the EU Directive* 267-294, 267 (Edward Elgar Publishing Limited, 2020).

105 *Thaler* v *Commissioner of Patents* [2021] FCA 879 133; see similar Fraser (n 2) 322-323; R Plotkin (n 80) 9, 135.

106 *Thaler* v *Commissioner of Patents* [2021] FCA 879 [133]

107 Jamie Carter, *The Most Powerful Supercomputers in the World—and What They Do*, TECHRADAR (Dec. 13, 2014), http://www.techradar.com/us/news/computing/the-most-powerfulsupercomputers-in-the-world-and-what-they-do-1276865 (noting that most advanced computer systems are owned by governments and large businesses)

108 Fraser (n 2) 327; see also R Plotkin (n 80) 7.

109 See Fraser (n 2) 327; Ryan Abbott, 'Hal the Inventor: Big Data and Its Use by Artificial Intelligence', *in* Cassidy R. Sugimoto, Hamid R. Ekbia & Michael Mattioli (eds), *Big Data is Not a Monolith* (MIT Press 2016), at 13; Abbott (n 2) 34; L Floridi, *The Fourth Revolution: How the Infosphere is Reshaping Human Reality* (Oxford: OUP, 2014), at 129; Vertinsky & Rice (n 3) 586.

110 Fraser (n 2) 327; **S** Anthony, "Innovation Gone Overboard" (2008) *Harvard Business Review* available at htDs:Hlbr.org/2008/03/innovation-gone-overboard/; Fast Company, "Is Too Much Industry Innovation a Bad Thing?" *Fast Company* available at https://www.fastcompaiy.coin/66620 1/too-mucli-industra -innovation-bad-thing; P Marks, 'Eureka Machines' (2015) 227 *New Scientist* 32-35.

would require much more effort to produce than the inventions they would generate. In such situations, an additional level of monopoly would be an overkill.[111]

**45** It is unnecessary to provide an exhaustive list of possible challenges or assess any of these claims here. Instead, it is suggested that the question whether AI-generated inventions (if they become possible at all) should be patented or not is a significant policy question that needs to be answered by identifying and weighing a variety of private and public interests. This is not a discussion to be carried out by a single judge assessing one patent application. It should be undertaken at policy level, where all Australian stakeholders are afforded the opportunity to be heard on the issue of AI inventiveness and patentability of AI-generated inventions in a transparent and public manner.[112]

## D. Recognizing an 'AI inventor' is compatible with the Patent Act

**46** The third general argument that the court pursues is that there is nothing in the *Patents Act* that prevents AI from being listed as an inventor.[113] In particular, his Honour rejected the Commissioner's argument that a broad interpretation of inventor would be incompatible with section 15(1) of the Act. According to the Commissioner, if an AI system could be deemed to be the 'inventor', it would prove difficult to establish the owner of such AI-generated inventions under section 15(1). Rejecting this argument, his Honour held that section 15(1) should be construed broadly so that the owner of the AI would be entitled to the ensuing patents from the AI-generated inventions. It is submitted that interpretation of section 15(1) is simply too broad and legally unsupported.

## I. Section 15(1)(a)

**47** His Honour referred to section 15(1)(a) which provides a patent may be granted to 'a person who is the inventor'. Beach J held that under this sub-section, the inventor can only be a person.[114] His Honour stated that:

**48** "[this] limb is not triggered in the present case because DABUS is not a person. Section 15(1)(a) does however demonstrate that the concept of a "person" is different to an "inventor". Moreover, it is a fallacy to argue from s 15(1)(a) that a non-human, indeed a non-person, cannot be an inventor. It could be, but it could not be granted a patent."[115]

**49** Essentially, his Honour held that s15(1)(a) would apply only in situations when an inventor is a person and would *not* apply in situations when an inventor is a thing, such as an AI machine. When an inventor is an AI system, the patent could be granted pursuant to section 15(1)(b) or (c).[116]

**50** This interpretation causes a two-fold problem. First, it leads to different treatment of 'human inventors' and 'AI inventors' under the *Patents Act.* As the court noted, there is a number of *Patents Act* provisions which clearly refer to human inventors (eg s 172(1), 182(3) and 185(a)).[117] These provisions, following the reasoning of the court, would not apply to 'AI inventors'. This would lead to different treatment of human inventors and AI inventors. For instance, according to s 172(1), "an *inventor,* or an inventor's successor in title, may *assign* the invention and any patent granted or to be granted for the invention, to the Commonwealth" (Italics added). Since, as his Honour agrees, AI is not capable of *assignment*, this provision would apply to a human inventor but not apply to an AI inventor.[118] This demonstrates a second problem resulting from such interpretation. Namely, the *Patents Act* in many instances relies on the assignment of rights as the main– and sometimes only– way of transferring rights from the inventor to another person. Since AI is not capable of assigning the rights, a number of provisions under the *Patents Act,* such as 172(1) discussed above, would be rendered ineffective in an 'AI inventor' scenario.

111 Fraser (n 2) 327; B Hattenbach and J Glucoft, 'Patents In An Era Of Infinite Monkeys And Artificial Intelligence' (2015) 19 *Stanford Technology Law Review* 32-51, at 50; Abbott (n 110) 13; Abbott (n 2) 34.

112 Governments in other jurisdictions (US, UK) and international organizations (WIPO) have already been running public consultations in this area, see discussion in section I.

113 *Thaler* v *Commissioner of Patents* [2021] FCA 879 [118].

114 *Ibid* [160].

115 Ibid.

116 See discussion below.

117 *Thaler* v *Commissioner of Patents* [2021] FCA 879 [212].

118 Since AI cannot transfer rights to anyone, the 'successor in title' who could rely on this provision would not exist either.

## II. Section 15(1)(b)

**51** After finding that s 15(1)(a) would not be applicable in an 'AI inventor' scenario, Beach J went on to state that Dr Thaler could possibly be granted a patent under s 15(1)(b). This section provides that a patent could be granted to a person who "would, on the grant of a patent for the invention, be entitled to have the patent assigned to the person". Whilst the Commissioner submitted that this sub-section requires an assignment of rights, which AI cannot perform, the court concluded that "s 15(1)(b) does not necessarily require any assignment from the inventor at all".[119] Accordingly, Dr Thaler could be granted a patent under this section because he is entitled to it under the common law doctrines of accession or possession.[120] These doctrines were relied upon by the applicant at first instance, who submitted that the "general rule that the owner of a thing is the owner of the fruits of that thing, much like the owner of a fruit tree is entitled to the fruit produced by that tree".[121]

**52** By permitting the applicant to rely on the doctrines of accession or possession as a part of s 15(1)(b), the court proposes a construction which goes beyond the explicit literary scope of the provision. The Commissioner argued that the provision explicitly requires that a patent can be granted only to a person who is 'entitled to have the patent *assigned*' to him/her (*Italics* added), and nothing in the provision suggests that it allows the entitlement in the patent to be derived by way other than the assignment.[122] To the contrary, Beach J held that the inventor does not necessarily need to be involved in the assignment.[123] However, the provision expressly refers to 'assignment' to which the person should be entitled, not to any other form of transfer of rights (such as based on accession or possession doctrines). As AI cannot assign rights, with which his Honour agrees, and the provision does not envisage any other ways how entitlement could be secured, this provision, arguably, cannot apply in an 'AI inventor' scenario.

119 *Ibid* [168].

120 *Ibid* [167] ("the ownership of the work of the artificial intelligence system is analogous to ownership of the progeny of animals or the treatment of fruit or crops produced by the labour and expense of the occupier of the land (fructus industrialis), which are treated as chattels with separate existence to the land").

121 *Stephen L. Thaler* [2021] APO 5 [2].

122 *Ibid* [26].

123 *Thaler* v *Commissioner of Patents* [2021] FCA 879 [169-175].

## III. Section 15(1)(c)

**53** Finally, it is submitted that the court erred in finding that s 15(1)(c) could apply in an AI-inventor scenario, e.g. that the requirements under this provision could be fulfilled in order for AI owner (or any other person) to be granted a patent over an AI-generated invention.

**54** Section 15(1)(c) provides that a patent may be granted to a person who "derives title to the invention from the inventor or a person mentioned in paragraph (b)". In other words, the person could be granted a patent if s/he can prove that they have derived (acquired) a title (ownership) of the invention either from the inventor or another person who was entitled to get the patent assigned to them (normally, the employer).

**55** In contrast to s 15(1)(b) that refers to assignment as the only way of securing the entitlement, s 15(1)(c) does not mention the exact way how the title could be derived. Keeping this in mind, Beach J held that "[t]he language of s 15(1)(c) recognises that the rights of a person who derives title to the invention from an inventor extend beyond assignments to encompass other means by which an interest may be conferred."[124] His Honour then went on to state that this allows derivation of the title based on the common law doctrine of accession or possession (discussed above): "Dr Thaler is a person who derives title from the inventor, DABUS, by reason of his possession of DABUS, his ownership of the copyright in DABUS' source code, and his ownership and possession of the computer on which it resides."[125]

**56** There are a few problems with the construction of the provision as proposed by Beach J. Firstly, according to s 15(1)(c), the title should be derived "from the inventor". It is questionable how the grantee could derive the title into the invention *from* AI when AI does not have a legal status and, thus, cannot own the title in the first place. This was also the argument adopted by the Deputy Commissioner at first instance.[126]

**57** Secondly, whilst the doctrine of accession or possession generally applies in relation to tangible property, there is no precedent as an authority for a proposition to be advanced that mere possession of a thing would allow one to derive legal title to the *intangible* assets produced by that thing. In the UK case of *Thaler v Comptroller-General*, Arnold LJ cited

124 *Ibid* [178].

125 *Ibid* [187-194].

126 *Stephen L. Thaler* [2021] APO 5 [30].

*Blackstone's Commentaries on the Laws of England*[127] and concluded that the doctrine of accession applies with relation to tangible property but not to intangible property, such as intellectual property rights.[128] As stated by Arnold LJ, one of the possible justifications could be that intangibles are non-rivalrous goods (consumption by one does not preclude simultaneous consumption by others) and, thus, are not susceptible of exclusive possession. Therefore, exclusive possession of the tangible property does not lead to exclusive possession of the intangible property produced by it.[129] As noted by Arnold LJ, Dr Thaler was unable to cite any authority in which the doctrine of accession had been applied to a new intangible produced by existing tangible property.[130] The applicant also submitted at the Appeal hearing that it was possible to conjure up other instances where the doctrine of accession clearly did not apply to a new intangible produced by existing tangible property.[131] Arguably, this demonstrates that there is currently no agreed upon universal legal basis for applying the doctrine of accession with relation to intangible assets, such as patent rights.

**58** Overall, contrary to what Beach J held, I argue that the *Patents Act* is not currently suitable to accommodate AI-generated inventions. If the term 'inventor' is given a broad reach to include AI as a potential inventor, then for the reasons given, section 15 would become flawed, and it would not be possible to identify a person who would be entitled to be granted an AI-generated patent.

## E. Conclusions

**59** Whilst the decision in *Thaler v Commissioner of Patents* was welcomed by those in favour of the concept of an 'AI inventor', the decision is questionable from a number of perspectives, and it is unclear whether it will withstand scrutiny when the appeal is heard by the Full Federal Court in 2022. The decision is driven by two assumptions, both of which are open to challenge: first, that AI systems are currently capable of autonomous inventions and, second, that such inventions should necessarily be protected by patent law. Relying on those assumptions, the court suggests a broad interpretation of the 'inventor' concept, which encompasses AI systems as inventors. In order to accommodate this extension under the *Patents Act*, the court adopted an overly broad interpretation of s15(1). The court's attempt to augment the legal grounds for granting patent rights by incorporating the common law doctrine of accession under both s15(1)(b) and s15(1)(c) are unconvincing. The current Australian *Patent Act* is not suited to accommodate AI as an inventor and, if AI is to become a legal inventor, the Act would need to be reviewed accordingly. Most importantly, the decision on whether it should be possible to list AI as an inventor in the patent application has major policy implications. Thus, this debate should take place not in courts but in policy making institutions and should engage all interested stakeholders in an open and transparent debate.

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127 *Blackstone's Commentaries on the Laws of England* (Clarendon Press, 1766), Book II, Chapter 26, paragraph 6, pages 404-405.

128 *Thaler v The Comptroller-General of Patents, Designs And Trade Marks* [2021] EWHC Civ 1374 [131-132].

129 *Ibid* [133].

130 *Ibid* [134].

131 *Ibid* [135].

# Zen and the Art of Repair Manuals

## Enabling a participatory Right to Repair through an autonomous concept of EU Copyright Law

by **Anthony D. Rosborough***

**Abstract:** Repair manuals are an essential resource for repairing today's modern and computerised devices. Though these manuals may contain purely utilitarian and uncopyrightable facts, they often receive copyright protection in their entirety as literary works. This protection can impede community-based efforts toward fostering a culture of participatory repair throughout the EU, including repair cafés and tool libraries. Participatory repair activities provide numerous environmental, social, and economic benefits. This article explores whether directive 2001/29/EC's exception for "uses in connection with the repair or demonstration of equipment" at Article 5(3)(l) (the "Repair Exception") may offer an avenue for enabling such non-profit activities. Following an examination of the shortcomings of recent EU-wide policy measures and industry-led commitments aimed at providing access to repair information, the article looks to the Repair Exception's origins, member state implementation, and its interpretive scope as an autonomous concept of EU law. Considering the strong public interest in participatory repair and dissemination of technical knowledge, the article calls for a robust autonomous interpretation of the Repair Exception in line with Article 11 TFEU. This interpretation should enable non-profit repair activities throughout the EU while accounting for and balancing the legitimate economic interests of rightsholders.

Keywords: copyright; right to repair; circular economy; directive 2001/29/EC; participatory repair; sustainable development



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## A. Introduction

1 When one thinks of copyrightable subject matter, repair manuals are not the first thing to come to mind. A repair manual has never been a New York Times bestseller or adapted into an Oscar-winning film, yet there is an art to creating them. Robert Pirsig, author of the 1974 classic novel *Zen and the Art of Motorcycle Maintenance*[1], was also a technical writer. For years he wrote repair and maintenance manuals for various computerised machines and components. He remarked in *Zen* that many maintenance manuals were "full of errors, ambiguities, omissions and information so completely screwed up you had to read them six times to make any sense out of them".[2] And on this point, he was in a good position to judge. His philosophical writings sought to find a harmony between the technical and aesthetic schools of thought. Repair manuals are very much at this intersection. They require the careful use of illustrations, diagrams, photographs, and written explanations to be understood and useful. Authors must make careful choices about the order and im-

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1 Robert M Pirsig, *Zen and the Art of Motorcycle Maintenance: An Inquiry into Values* (Harper Torch, 2006).

2 *Ibid* 33.

portance of instructions and how they are understood by the reader. This involves substantial originality in the copyright sense.

**2** It should be no surprise then that original equipment manufacturers ("OEMs") and third-party publishers have long sought copyright protection in repair manuals. The third-party production and publication of manuals is also a large industry[3], and rightsholders have discouraged their unauthorised distribution online.[4] Yet in some instances, the exclusive copyright protection afforded to authors of repair manuals has run contrary to the public interest in access and dissemination of crucial information. This exclusivity can shorten the effective lifespan of many products, with enormous social and environmental consequences.

**3** This article seeks to explore this tension in the context of EU copyright law. Its primary contribution is its analysis of an exception and limitation to copyright in the Directive 2001/29/EC[5] (the "InfoSoc Directive") which may enable the reproduction and distribution of repair manuals online. Following a survey of the social, economic, and environmental costs of repair manual exclusivity, it highlights the public interest in fostering a culture of participatory repair. It then addresses the inadequacy of recent EU reforms which mandate "access" to repair information, and particularly their inability to support participatory non-profit repair organisations such as tool libraries and repair cafés.

**4** This article is normatively connected to the broader Right to Repair movement. In response to the market power wielded by large technology manufacturers, the Right to Repair seeks to provide independent technicians and everyday people with the means and ability to repair and extend the lifespan of the devices and products they own. In practice, this may mean the ability to access specialised parts, tools, and information needed to conduct repairs to everything from laptop computers to cinema projectors to agricultural equipment. The Right to Repair has many normative pillars, including safeguarding consumer rights, promoting market competition, promoting environmental sustainability, and safeguarding the public interest from an overreach of intellectual property rights. Though the movement originated largely within the United States principally from the perspective of consumer protection, Europe's approach to the Right to Repair has adopted a decidedly environemental rationale, supported by the EU's Circular Economy Action Plan[6], the EcoDesign Directive[7], and the French Repairability Index.[8]

**5** Looking to intellectual property laws within the EU, this article looks to the InfoSoc Directive and the interpretation of Article 5(3)(l), which permits 'uses in connection with the demonstration or repair of equipment' (the "Repair Exception").[9] In surveying the genesis of this provision along with the CJEU's decisions in *Deckmyn*[10] and *Spiegel Online*[11], the Repair Exception is analysed as an autonomous concept of EU law. In this vein, the central question posed by this analysis is: can the InfoSoc Directive's Repair Exception support participatory repair through wider access and dissemination of repair manuals throughout the EU?

**6** Answering this question involves preliminary analysis of the extent to which repair manuals can be the subject of copyright protection to begin with. Accordingly, Part I examines common elements in repair manuals and their copyright originality, as well as the typical processes undertaken to produce them. Part II then addresses recent developments within the EU and elsewhere that evidence a high degree of public interest in access to repair manuals through a combination of legal mandates and market incentives for manufacturers. This involves a closer

3 Greg Whitaker, "Haynes Publishing Acquired by InfoPro Digital", (*Car Aftermarket Trader*, 13 February 2020) <https://www.catmag.co.uk/haynes-publishing-acquired-by-info-pro-digital>.

4 Mike Masnick, "Toshiba: You Can't Have Repair Manuals Because They're Copyrighted And You're Too Dumb To Fix A Computer" (*TechDirt*, 12 November 2012) <https://www.techdirt.com/articles/20121110/22403121007/toshiba-you-cant-have-repair-manuals-because-theyre-copyrighted-youre-too-dumb-to-fix-computer.shtml>.

5 Directive 2001/29/EC of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the Information Society [*InfoSoc Directive*].

6 European Commission, "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A new Circular Economy Action Plan For a cleaner and more competitive Europe", COM/2020/98 <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN>

7 Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products, OJ L 285 (EcoDesign Directive).

8 L'Indice de Repairabilite, *Repairability Index* <https://www.indicereparabilite.fr/> (Repairability Index).

9 *Ibid* 5(3)(l).

10 Case C-201/13 *Johan Deckmyn and Vrijheidsfonds VZW v Helena Vandersteen and Others*, ECLI:EU:C:2014:2132.

11 C-516/17 *Spiegel Online* ECLI:EU:C:2019:625.

look at the October 2019 implementing regulations pursuant to Directive 2009/125/EC (the "EcoDesign Directive") and Apple's recent voluntary commitment to provide access to device repair information. Part III then investigates the genesis of the InfoSoc Repair Exception, its implementation within a handful of member states, and its status as an autonomous concept of EU law. Part IV proposes an interpretation of the Repair Exception which can support participatory repair through the dissemination of repair manuals online while accounting for the legitimate interests of rightsholders. The article concludes by calling for a closer examination of the Repair Exception as a vehicle for enabling participatory repair activities and the diffusion of technical knowledge.

**7** Before delving into this analysis, a few caveats should be noted at the outset. Firstly, this inquiry is limited to copyrightable subject matter as set out in the InfoSoc Directive. This necessarily excludes (for example) the reproduction of computer programs or circumvention of software technological protection measures (TPMs) in relation to repair. Though both computer programs and software TPMs can be implicated by repair activities[12], these matters are more squarely addressed by Directive 2009/24/EC[13] (the "Software Directive"), which does not contain an analogous repair exception. Secondly, this analysis does not address the potential anti-competitive uses of copyright in repair manuals and its impacts on secondary markets. Though it is plausible that denying access to repair and maintenance information could amount to an abuse of dominance under competition law[14], the principal focus of this article is situated within the boundaries of copyright protection, applicable exceptions, and their relationship to largely non-commercial repair activities throughout the EU.

## B. Copyright's Subsistence in Repair Manuals

**8** A key tenet of copyright law is that protection should only be afforded to works that are "original". In the European Union, this standard is determined by the extent to which a work can be considered the author's 'own intellectual creation'.[15] Though there is no shortage of scholarly discussion over whether this standard is more (or less) restrictive than in other jurisdictions[16], there is far less conceptual ambiguity regarding the things which are clearly *not* original. Often referred to as the 'idea/expression dichotomy', a cornerstone of ostensibly every copyright system[17], is that facts, ideas, processes, and purely utilitarian aspects of things are not original.[18] Whether these things are considered part of the public domain, excluded from protection on a purely doctrinal basis, or lacking in originality, the effect is the same: facts, ideas and utilitarian processes cannot form the basis for exclusive rights.

**9** This places copyright protection for repair manuals in a rather peculiar position. On the one hand, repair manuals are a mere recitation of a mechanical process – no different from a recipe for beef wellington, or a simple mathematical equation. On the other hand, writing repair manuals is a creative exercise with many deliberate choices made by authors. Certainly, in most instances it is infused with artistic decision-making, conscious choices of the author in the way certain procedures are described, as well as the arrangement of accompanying illustrations and photographs.

**10** Take for example Haynes Owner's Workshop Manuals. These manuals have long guided fixers through the maintenance and repair of cars and motorcycles, but they have since expanded to household appliances and computers. Haynes has even begun publishing so-called 'practical lifestyle' manu-

12 Anthony Rosborough, 'Unscrewing the Future: The Right to Repair and the Circumvention of Software TPMs in the EU' (2020) 11(1) JIPITEC 443.

13 Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs [*Software Directive*].

14 See e.g. Case C-527/18 *Gesamtverband Autoteile-Handel e.V. v KIA Motors Corporation,* ECLI:EU:C:2019:762.

15 Case C-5/08 *Infopaq International A/S v Danske Dagblades Forening* ECLI:EU:C:2009:465; see also Eleonora Rosati, *Originality in EU copyright: full harmonisation through case law* (Edward Elgar 2013) 4; and Ramon Casas Vallés, 'The requirement of originality', in Estelle Derclaye (ed) *Research Handbook on the Future of EU Copyright* (Edward Elgar 2009) 102-132.

16 See Eleonora Rosati, 'Towards an EU-wide Copyright? (Judicial) Pride and (Legislative) Prejudice?' (2013) 1 IPQ 47-68; and Andreas Rahmatian, 'Originality in UK Copyright Law: The Old "Skill and Labour" Doctrine Under Pressure', (2013) 44 IIC 4.

17 See, for example, the United States Copyright Act, 17 USC § 102(b) ("In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work").

18 Agreement on Trade-Related Aspects of Intellectual Property Rights (15 April 1994), Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 UNTS 299, 33 ILM 1197 (1994), Art 9(2).

als which address topics such as "Sleep", "Chickens" and "Menopause".[19] For the manuals in Haynes' more classic car and motorcycle repertoire, the intended audience is primarily home mechanics or DIY repairers. For these manuals, Haynes attests that production of a repair manuals takes about six months, involving a team of technical writers and mechanics to completely tear down and rebuild the vehicle followed by a drafting and proofing process.[20] This process involves the collection of photographs and consultation among writers and mechanics to develop accurate repair procedures.

**11** Even under a very restrictive conceptualisation of copyright originality, there is little doubt that repair manuals like the ones produced by Haynes meet the requisite threshold. The exercise of human creative choices, arrangement of information, and selection of photographs can be sufficient to attract originality. The CJEU has agreed with this notion. In *SAS Institute Inc v World Programming,* the CJEU was asked (in part) to determine whether a user manual describing the functions of a computer program can be protected by copyright as a literary work. While the CJEU found that the "keywords, syntax, commands... options, defaults, and iterations" did not quality for copyright protection, it did find that "certain elements described in the manual...may constitute an infringement of the copyright if...the elements reproduced...are the expression of the author's own intellectual creation".[21]

**12** Though the subsistence and exercise of copyright in repair manuals may find agreement with its broader purposes and objectives, there is a public interest trade-off here. The utility in repair manuals is not merely in these works as ends in and of themselves. They are also instrumental. They are in fact tools which enable a host of socially beneficial activities while documenting and distributing technical ability.[22] In aiding repair and maintenance, this diffusion of knowledge has tangible, real-world benefits. Yet, copyright's exclusive rights can act as an impediment.

**13** This impediment is even more prominent where repair manuals are produced by original equipment manufacturers ("OEMs") rather than third parties like Haynes. For devices which have not been manufactured for quite some time, niche products, or specialised equipment where demand for repair manuals is not significant enough to attract third party publishers, often the OEM's documentation is the only thing that exists.[23] And in some cases, OEMs do not release or provide access to these manuals at all.[24] As a result, many independant repairers and community repair groups rely on a grey market of service and repair manuals which are leaked by authorised technicians working on the 'inside'.[25] In some instances, OEMs have used intimidation tactics to shut down websites which host these materials, significantly narrowing access to crucial information.[26]

**14** In this way, the exclusive rights afforded by copyright are particularly potent in curtailing the decentralisation of knowledge, how-to, and the ability to conduct repairs. By holding a monopoly over the reproduction and distribution of repair manuals, copyright provides OEMs an additional layer of protection that transcends the economic rights manuals as *works* and amounts to a functional barrier to the repair of *things*.[27] Therefore, the public interest in access to repair manuals and information is particularly important across several dimensions.

## I. The Costs of Repair Manual Exclusivity

### 1. Public Health

**15** Copyright in repair manuals can also pose challenges to effective healthcare delivery. This became appar-

19 Haynes, *Practical lifestyle manuals* <https://haynes.com/en-gb/practical-lifestyle-manuals>.

20 Haynes, *FAQ* <https://haynes.com/en-us/faq>.

21 Case C-406/10, *SAS Institute Inc v World Programming Ltd,* ECLI:EU/C:2012:258, 122.

22 Cornelius Schubert, "Repair Work as Inquiry and Improvisation: The Curious Case of Medical Practice" in Ignaz Strevel (ed) *Repair Work Ethnographies: Revisiting Breakdown, Relocating Materiality* (Palgrave MacMillan 2019) 35.

23 Kyle Wiens, "Using copyright to keep repair manuals secret undermines circular economy" (*The Guardian,* 20 December 2013) <https://www.theguardian.com/sustainable-business/copyright-law-repair-manuals-circular-economy>.

24 US, Federal Trade Commission, *Nixing the Fix: An FTC Report to Congress on Repair Restrictions* (May 2021) <https://www.ftc.gov/system/files/documents/reports/nixing-fix-ftc-report-congress-repair-restrictions/nixing_the_fix_report_final_5521_630pm-508_002.pdf>.

25 Kyle Wiens, "The Shady World of Repair Manuals: Copyrighting for Planned Obsolescence" (*Wired*, 12 November 2012) <https://www.wired.com/2012/11/cease-and-desist-manuals-planned-obsolescence/>.

26 Masnick (n 4).

27 Wiens (n 23).

ent in early 2020 when iFixit, an online resource for device repair parts, tools, and information, began to construct a medical device library of repair manuals and guides in response to the COVID-19 pandemic.[28] The database contains over 13,000 manuals and guides for medical device repair, including hospital beds, surgical equipment, and laboratory equipment. The database includes both repair manuals published by OEMs as well as training manuals published by third parties.

**16** Not long after launching the medical device library, some manufacturers and rightsholders showed resistance. One of which was Steris, a manufacturer of medical sterilisers and related surgical equipment.[29] In June of 2020, Steris sent a cease-and-desist letter[30] to iFixit, demanding that its repair manuals be taken down on the basis that it infringed copyright. In response, iFixit and the Electronic Frontier Foundation ("EFF") jointly issued a letter[31] in which they refused to comply with Steris' demand, citing the safe harbour for online platforms under the United States *Digital Millennium Copyright Act*[32] and the US doctrine of fair use. That appears to have concluded the matter, as several repair manuals for Steris' equipment remain in iFixit's digital library.[33]

**17** The Steris example sheds light on the social costs of repair manual exclusivity in the context of public health. In the case of ventilators and other crucial medical devices, access to repair information for complex and computerised medical equipment can be a matter of life and death.[34] Copyright in repair manuals is one of many tools used by OEMs to curtail independent repair, including digital access keys, restrictions on spare parts, and training sessions and certifications for on-site staff.[35] Though greater access to repair manuals may not be a complete solution to the challenges faced by healthcare providers in relation to medical equipment, it undoubtedly forms a crucial part of one.

## 2. The Environment

**18** In addition to the public health implications of repair manual exclusivity, restricted access can also result in shortened product lifecycles and environmental harm. Modern electronic devices are becoming more difficult to repair as the result of design choices and legal protections. The overall trend toward sleeker and thinner devices means that more of the internal components are glued or soldered together, making them increasingly difficult to open and repair without detailed information from their manufacturer.[36] The widespread proliferation of embedded computer systems within otherwise banal household objects makes repair manuals and information all the more important to the service and repair of these things.[37] With the present-day global microchip shortage looming large, seemingly every product – dish washers, hairbrushes, hot tubs, and cars - now has a computer embedded within it.[38] Without access to repair manuals and information, many of these devices are unrepairable and abandoned prematurely.

**19** The manufacture and disposal of electronic devices takes a massive toll on our environment. Beginning with the extraction of raw materials from ecologically sensitive areas, use of lead soldering, shipping, and packaging, there are significant environmental

28 iFixit, 'Medical Device Repair' <https://www.ifixit.com/Device/Medical_Device>.

29 iFixit, 'Steris Sterilizer Repair' <https://www.ifixit.com/Device/Steris_Sterilizer>.

30 Kyle Wiens, 'I received a threatening letter from Steris, a medical device manufacturer unhappy that we are helping hospitals repair their equipment' (*Twitter,* 11 June 2020) <https://twitter.com/kwiens/status/1271134890872856577/photo/1>.

31 Electronic Frontier Foundation, 'Letter from EFF to Steris on behalf of iFixit 5-26-2020' (*EFF,* 26 May 2020) <https://www.eff.org/document/letter-eff-steris-behalf-ifixit-5-26-2020>.

32 *Digital Millennium Copyright Act*, 17 USC § 1002(c) (Supp. V 1993) (US) [*DMCA*].

33 iFixit (n 28).

34 Nathan Proctor, '"Life and death" – Medical equipment repairers push for Right to Repair during COVID-19 pandemic' *U.S. PIRG* (Washington, 19 May 2020) <https://uspirg.org/blogs/covid-19/usp/%E2%80%9Clife-and-death%E2%80%9D-medical-equipment-repairers-push-right-repair-during-covid-19>.

35 Anne Marie Green, Mark Morgenstein and Nathan Proctor, "Patient Procedures are Commonly Delayed While Manufacturers Block Others from Repairing Equipment" (*U.S. PIRG,* 15 October 2020) < https://uspirg.org/news/usp/patient-procedures-are-commonly-delayed-while-manufacturers-block-others-repairing>.

36 Maddie Stone, "How Apple Decides Which Products Are 'Vintage' and 'Obsolete'" (*OneZero,* 26 May 2020) <https://onezero.medium.com/how-apple-decides-which-products-are-vintage-and-obsolete-6055d0bda422>.

37 Wiens (n 23).

38 Chris Baraniuk, 'Why is there a chip shortage?' (*BBC News,* 27 August 2021) <https://www.bbc.com/news/business-58230388>.

costs in the manufacture of these products. Even more troubling are the end-of-life impacts, waste disposal, and difficulties in recovering rare earth elements.[39] Poorly planned disposal of electronics waste can also be harmful to human health and exacerbate social inequality, disproportionately impacting the global south.[40] Alarmingly, electronics is the fastest growing stream of global waste, growing 3 to 4 percent each year.[41]

### 3. Participatory Repair

**20** To mitigate the public interest costs of un-repairability, recent years have borne a renaissance of the lost art of repair on a community and collective scale. With the goal of making repair activities within everyone's grasp, these efforts have resulted in the creation of repair cafés[42] and empowered tool libraries around the world. Repair cafés are free and open workshops where people can bring products in need of repair and have volunteers help find information and parts. They are not only empowering individuals to take responsibility for fixing things themselves, but they are also actively increasing product lifespan, reducing waste, and generating knowledge. There are currently over 1,500 repair cafés worldwide, where people are fixing their own smartphones, laptops, household electrical appliances, bicycles, and many other things.[43] The COVID-19 pandemic has even borne virtual repair cafés into existence, including the international efforts of Fixit Clinic.[44]

**21** The success and viability of these participatory repair activities depend not only on the efforts of volunteers, but also the free and open availability of repair manuals and information. Repair manuals can include tables of crucial repair information, such as circuit diagrams, wiring schematics and parts lists. This information is particularly crucial for electrical and electro-mechanical products, as well as those with embedded computer systems.[45] Though repair information for many products is available online through services such as *Manuall*[46] and *iFixit*[47], copyright protection in repair manuals acts as an impediment to wider availability. Given the foregoing environmental, social, and public health implications of un-repairability, there are compelling public interest justifications to encourage broader access to repair manuals.

## C. Encouraging Repair Manual Access in the EU

**22** The social, economic, and environmental costs of exclusive rights in repair information have not been lost on policymakers in the European Union. So far, a combination of member state level[48] and EU-wide policy initiatives have attempted to promote wider access to repair information to encourage the repairability of consumer products to promote a "circular economy".[49][50] The following

39 Teklit Gebregliorgis Ambaye et al., "Emerging technologies for the recovery of rare earth elements (REEs) from the end-of-life electronic wastes; a review on progress, challenges, and perspectives" (2020) 27:29 *Environmental Science and Pollution Research* 36052-36074.

40 Michelle Heacock et al., 'E-Waste and Harm to Vulnerable Populations: A Growing Global Problem' (2016) Environ Health Perspect 124(5) 550 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4858409/>.

41 Sabah M Abdelbasir et al, 'Status of electronic waste recycling techniques: a review' (2018) 25 Environmental Science and Pollution Research 16533 <https://link.springer.com/article/10.1007%2Fs11356-018-2136-6>.

42 Repair Café, *About* <https://www.repaircafe.org/en/>.

43 Repair Café, *FAQ* <https://www.repaircafe.org/en/faq/>.

44 Fixit Clinic, *About* <https://fixitclinic.blogspot.com/>.

45 Martin Charter and Scott Keiller, 'Repair cafes: Circular and social innovation' in Martin Charter (ed) *Designing for the Circular Economy* (Routledge 2019) 277.

46 Manuall, *About us* <https://www.repaircafe.org/en/partners/manuall/>.

47 iFixit, *Repair guides* <https://www.ifixit.com/Guide>.

48 Repairability Index (n 8).

49 European Commission (n 6).

50 "Circular economy" is a concept that refers to a set of policies to establish an economic system that eliminates waste and promotes the continual use of resources. This means maintaining the value of materials and products through expanding product life cycles and lengthening so-called "product loops". In the context of appliances and consumer electronics, circular economy initiatives involve maximising the efficiency of resource extraction, minimising environmental impacts though end-of-life product design, facilitating reuse markets, repairability, investing in material recovery technologies, and improved use of recycled materials. For further reading, see: Martin Charter, *Designing for the Circular Economy* (New York, Routledge, 2019) at 2; Sahra Svensson et al., 'The Emerging 'Right to Repair' legislation in the EU and the U.S.' (Going Green Care Innovation Conference, Vienna, November, 2018). <https://portal.research.lu.se/en/publications/the-emerging-right-to-repair-legislation-in-the-eu-and-the-us>, and Shahana

section canvases a recent EU initiative to stimulate repair information accessibility and identifies its shortcomings in resolving the deeper impediments to participatory repair posed by copyright.

## I. Directive 2009/125/EC (the "EcoDesign Directive")

**23** Key to the EU's circular economy objectives is the EcoDesign Directive.[51] It establishes a system for mandatory requirements concerning the environmental performance of energy-consuming products and devices. It is a framework directive[52], which instead of directly setting minimum standards relies on subsequent regulations to achieve various goals. The EcoDesign Directive's October 2019 implementing regulations (the "2019 Regulations") have prioritised access to repair information as part of its larger circular economy objectives.[53][54]

**24** The 2019 Regulations address ten product categories, effective from April 2021 onward.[55] These categories include refrigerators, washing machines, dishwashers, electronic displays (including televisions), light sources, external power supplies, electric motors, vending machines, power transformers, and welding equipment. Though each product category has its own nuances in terms of the prescriptive regulatory requirements, each of the 2019 Regulations require manufacturers to provide "access to repair and maintenance information" after products have existed on the market for a certain amount of time.[56] Though ultimately a step in the right direction, the EcoDesign Directive falls short of ameliorating the impediments to repair posed by copyright.

### 1. "Professional Repairers"

**25** Importantly, the EcoDesign Directive's ten sets of Regulations require that repair and maintenance information be accessible to "professional repairers"[57] -- a concept which is loosely defined. In the case of electronic displays, professional repairer is defined as "an operator or undertaking which provides services of repair and professional maintenance of electronic displays". Exactly who is considered a professional repairer is largely left to the OEM to unilaterally decide. Prior to making this determination, the manufacturer can require that the repairer demonstrate requisite "technical competence" and show proof of insurance covering liabilities resulting from its activities.[58][59] In effect, manufacturers are left with considerable discretion to determine which repairers are professional and which are not.[60] And in any case, the requirement to show proof of insurance and formally demonstrate technical competence leaves repair cafés, community initiatives and everyday people out of the equation entirely.

Althaf, Callie Babbitt & Roger Chen, 'Forecasting electronic waste flows for effective circular economy planning' (2019) Resour Conserv Recycl 151, 2.

51 EcoDesign Directive (n 7).

52 For a discussion on the distinction between framework directives and "classic" directives, see Emilia Korkea-aho, "Legal interpretation of EU framework Directives: a soft law approach" (2015) 40(1) E L Rev, 70-88.

53 Commission, 'Communication From the Commission: EcoDesign Working Plan 2016-2019' COM(2016) 773 final, 8-9.

54 Comission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Closing the loop – An EU action plan for the Circular Economy' COM(2015) 614 final.

55 European Commission, "Regulation laying down ecodesign requirements 1 October 2019" (*Europa.eu,* 1 October 2019) <https://ec.europa.eu/energy/topics/energy-efficiency/energy-label-and-ecodesign/regulation-laying-down-ecodesign-requirements-1-october-2019_en>.

56 For example, dishwasher manufacturers must provide access to repair and maintenance information two years after placing the product on the market. See Commission, Annexes to the Commission Regulation laying down ecodesign requirements for household dishwashers pursuant to Directive 2009/125/EC of the European Parliament and of the Council amending Commission Regulation (EC) No 1275/2008, C(2019) 2123 final, Annex II 5(3).

57 European Commission, "The new ecodesign measures explained" (*Europa.eu,* 1 October 2019) <https://ec.europa.eu/commission/presscorner/detail/en/QANDA_19_5889>.

58 Commission, Annexes to the Commission Regulation laying down ecodesign requirements for electronic displays pursuant to Directive 2009/125/EC of the European Parliament and of the Council amending Commission Regulation (EC) No 1275/2008, C(2019) 2123 final, Annex II D(5)(b).

59 *Ibid* 5(3)(a)(i)-(ii).

60 Chloé Mikolajczak, "New Ecodesign regulations: 5 reasons Europe still doesn't have the Right to Repair" (*Repair. Eu,* 21 March 2021) <https://repair.eu/news/new-ecodesign-regulations-5-reasons-europe-still-doesnt-have-the-right-to-repair/>.

## 2. "Access" to Repair Manuals

**26** The 2019 Regulations are further limited by their stipulation that manufacturers are required only to provide "access" to repair and maintenance information. This notion of access is significant from a copyright perspective. The 2019 Regulations do not require OEMs to make repair manuals "available", nor provide "copies". To satisfy the requirement to provide access, OEMs may instead host their repair and maintenance information within a web-based subscription-service platform which may prohibit the user from electronically processing the information. Not unlike an eBook, this could include restrictions and prohibitions on electronic processing by users, including downloading or printing. These restrictions could significantly impair the ability for independent repairers and every people to access, share, improve, annotate, and disseminate repair manuals for the benefit of others.

**27** The reliance on web-based platforms for repair manual access is not merely speculative. There is much precedent for this in the automotive industry, where repair information is obtained by independent repair technicians through an online subscription service.[61] Given the wide range of products as set out in the EcoDesign Directive's 2019 Implementing Regulations, it is likely that manufacturers would turn to a similar online platform to host their maintenance manuals and technical information.

**28** Precedent reveals that there are drawbacks to this approach, however. This subscription access model for repair and maintenance information was at issue before the European Court of Justice in 2019. Namely, in *Gesamtverband Autotelle-Handel eV*[62], the ECJ was asked to interpret Article 6 of EU Regulation 2007/715.[63] Of particular concern for the ECJ was the obligation of manufacturers to provide:

> "...unrestricted and standardised access to vehicle repair and maintenance information to independent operators through websites using a **standardised format** in a readily accessible and prompt manner, **and in a manner which is non-discriminatory** compared to the provision given or access granted to authorised dealers and repairers."[Emphasis added]

**29** KIA Motor Company provides repair and maintenance information to its licenced repairers and dealers in non-web format which is capable of electronic processing. In other words, the information is provided to these repairers as downloadable data. Independent repairers, however, are given access to KIA Motor Company's repair and maintenance information through partslink24's online platform. The Gesamtverband, a German trade association for spare automotive parts, alleged that this constituted discrimination within the meaning of Article 6 of EU Regulation 2007/715. The ECJ disagreed with the Gesamtverband's claim. It found no difference in the extensiveness or quality of the information provided. In effect, this means that in providing access, manufacturers have no obligation to provide downloadable copies or versions capable of independent electronic processing.

**30** The decision in *Gesamtverband Autotelle-Handel eV* offers some clues as to how manufacturers will respond to their obligations under the EcoDesign Directive's 2019 Regulations. For one, where manufactures are given an option to restrict electronic processing and dissemination of repair manuals, they likely will. And furthermore, imposing use restrictions is most easily accomplished by offering access to repair manuals through a web-based subscription platform.

**31** The bottom line is that standardised access does not mean being given a copy of a manual. Nor does it provide independent repairers and everyday people with the opportunity to make full use of the information provided. In leaving manufacturers with considerable control over the format and model for accessing repair information, the 2019 Regulations fall short of enabling participatory repair initiatives.

## 3. "Reasonable and Proportionate" Fees

**32** Finally, the 2019 Regulations permit manufacturers to charge "reasonable and proportionate fees" for access to repair manuals and any "regular updates".[64] What is reasonable or proportionate in the case of product-specific repair manual databases is still anyone's guess. Looking to partslink24, it is likely that manufacturers would structure these fees on a monthly or yearly subscription basis – providing access to a repertoire of manuals and information. For smaller manufacturers, they may also outsource this to third parties. In the case of amateur and DIY repairers, or those working on a volunteer

61 See, for example "Partslink24", LexCom, *Products* <https://www.lexcom.co.jp/en/products/>.

62 Case C-527/18 *Gesamtverband Autoteile-Handel e.V. v KIA Motors Corporation* ECLI:EU:C:2019:762.

63 Council Regulation (EC) 715/2007 of 20 June 2007 on type approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information [2007] OJ I.171/1.

64 Commission (n 58), 5(3)(c).

basis within (for example) not-for-profit organisations, this structure could very easily become exclusionary and prohibitive. Of course, commercial independent repairers may easily absorb monthly access fees as part of their operational costs. More generalist, non-profit and community repair environments like tool libraries and repair cafes, however, may find this infeasible where the range of products and devices being repaired vary widely from day to day.

**33** Though the European Commission asserts in its explanation of the 2019 Regulations that the measures will "enhance the repair market", the above demonstrates that this may come at a cost. They are largely ineffective in encouraging an inclusive and participatory culture of repair. By focusing solely on professional repair businesses, the 2019 Regulations fall short of making repair manuals accessible to everyday people, community organisations and hobbyists. Broadening access to repair in this way is necessary to achieve a whole host of socially beneficial outcomes, including reducing electronics waste, facilitating a circular economy within the internal market, and diffusing technical knowledge throughout the EU. For those outside of the commercial repair business envisioned by the 2019 Regulations, access to repair manuals will likely depend on what is freely available through basic web searches or through so-called grey markets for repair manuals.[65]

## II. Industry-led Commitments

**34** Beyond regulatory measures like those found in the EcoDesign Directive, at least some manufacturers have shown willingness to voluntarily provide free access to their repair information. These commitments often echo the EcoDesign Directive's access approach. Notably, technology giant Apple announced in November of 2021 that it would be launching its own Self Service Repair program.[66] The announcement came as a surprise to many Right to Repair advocates, who had long regarded Apple as the figurehead of opposition to proposed policy reforms which would enable greater access to replacement parts, tools, and manuals.[67] Intended for "individual technicians with the knowledge and experience to repair electronic devices", Apple's Self Service Repair program will provide access to Apple's genuine repair manuals, along with specialised parts and tools. The details remain to be fully fleshed out in detail.

**35** Though industry-led commitments like Apple's Self Service Repair program provide reason to feel optimistic about more widespread access to repair manuals, the underlying copyright issues persist. Importantly, Apple's Self Service Repair Program's announcement does not commit to ensuring open access to its manuals and related information. Rather, it requires that participants register for the program, pay for the necessary parts and tools, and demonstrate the requisite competence to carry out the desired repair before being given access to the necessary information.

**36** Ultimately, industry-led commitments like Apple's Self Service Repair program provide *permission* to access repair manuals at the charitable discretion of the manufacturer.[68] This is a far cry from empowering individual repairers through a user's right or copyright exception. Under a voluntary arrangement, the keys to understanding how to repair our own devices and products will remain in the hands of those who manufactured them. Not only is this likely to result in inconsistencies across product categories and industries, but it is reasonable to assume that access to these manuals would be facilitated through a web-based platform. For the same reasons that the 2019 Regulations fall short of encouraging participatory repair throughout the EU, voluntary commitments from private industry are also insufficient. For products and manuals which fall outside of these commitments, the only reprieve afforded to community repair groups and everyday people is found in the exceptions and limitations to copyright.

## D. The EU's Exceptions and Limitations to Copyright

**37** Copyright law in the European Union is comprised of an overlapping patchwork of directives. The result is that no single EU directive addresses the whole of copyright and its related subjects. This compartmentalisation of EU copyright law can present difficulties in discerning a coherent overall legislative purpose and intent. Nevertheless, the instrument governing the lion's share of copyrightable subject-matter

65 Wiens (n 23).

66 Apple, 'Apple Announces Self Service Repair' <https://www.apple.com/ca/newsroom/2021/11/apple-announces-self-service-repair/>.

67 U.S. PIRG, 'Who doesn't want the Right to Repair? Companies worth over $10 trillion' <https://uspirg.org/blogs/blog/usp/who-doesn%E2%80%99t-want-right-repair-companies-worth-over-10-trillion>.

68 Anthony D. Rosborough, "Apple's pledge to let consumers repair their own gadgets doesn't go far enough" (*Corporate Knights*, 21 December 2021) <https://www.corporateknights.com/waste/apples-pledge-to-let-consumers-repair-their-own-gadgets-doesnt-go-far-enough/>.

is Directive 2001/29/EC (the "InfoSoc Directive").

**38** The InfoSoc Directive was constructed at the turn of the millennium with the primary goal of harmonising copyright law throughout the EU while implementing the 1996 WIPO World Copyright Treaty ("WCT"). In addition to providing a framework of exclusive rights, the InfoSoc Directive includes an exhaustive list of non-mandatory exceptions[69] to the rights of reproduction and communication to the public for Member States to pick and choose from. Sometimes referred to as the "shopping list"[70][71] or the "European menu"[72], these optional exceptions have been implemented to varying degrees throughout the EU. As a result, determining which exceptions apply in which member states requires sorting through a relatively complex hodgepodge of legal instruments.[73]

**39** The InfoSoc Directive's list of non-mandatory exceptions is found at Articles 5(2) and 5(3). The optional exceptions or limitations listed in Articles 5(2) and 5(3) include uses for teaching and scientific purposes, uses for people with disabilities, for reporting current events, quotations, public security, and others. While member states are free to choose from these 15 optional exceptions and limitations and those in Article 5(2), they are generally *not* free to imagine new ones. The only flexibility left to member states in this regard is the so-called "grandfather clause" found at Article 5(3)(o), which allows member states to retain exceptions or limitations in their copyright statutes which predate the InfoSoc Directive's enactment.

**40** Measuring the overall efficacy and consequences of this non-mandatory (yet exhaustive) approach to copyright exceptions and limitations is well beyond the scope of this article. It is also well canvassed in the existing literature by many notable scholars.[74] The overwhelming consensus among these experts is that the shopping list approach has been generally ineffective (and in some instances counterproductive) to harmonising copyright law throughout the European Union.[75] Furthermore, by effectively locking in the potential scope of exceptions and limitations, the InfoSoc Directive's optional and exhaustive approach impairs the ability of the EU legislator to respond to technological change and digitalisation[76], necessitating the enactment of subsequent directives.[77]

**41** One reason for the shopping list's shortcomings is the paucity of judicial interpretation at the EU level. Indeed, more active judicial interpretation of the exceptions and limitations is a necessary *quid pro quo* for its exhaustive character. There are at least two reasons why this is the case: first, the closed character of the list necessitates some degree of evolutionary judicial interpretation in response to societal and technological change. Secondly, interpretation is necessary for resolving definitional and conceptual ambiguities as they appear in the list itself. Leaving member states to their own devices on these two fronts only encourages them to arrive at their own creative interpretations, and therefore undermines the InfoSoc Directive's harmonisation goal. The need for "coherent application" in this regard is set out in Recital 32 of the InfoSoc Directive, which states that the:

> "...list takes due account of the different legal traditions in Member States, while, at the same time, aiming to ensure a functioning internal market. Member States should arrive at a coherent application of these exceptions and limitations..."

**42** Of course, coherent application does not occur organically; and certainly not for those exceptions and limitations which are uncommon or addressed

69 Though the "temporary acts of reproduction" at Article 5(1) is mandatory.

70 Bernt Hugenholtz, 'law and technology – Fair use in Europe' (2013) 56(5) *Communications of the ACM* 26, 27.

71 Eleonora Rosati, 'Copyright in the EU: in search of (in) flexibilities' [2014] 9(7) JIPLP 585, 592.

72 Lucie Guibault, 'Why Cherry-Picking Never Leads to Harmonisation: The Case of the Limitations on Copyright under Directive 2001/29/EC' (2010) 1 JIPITEC 55, 58.

73 For a helpful visualisation of this complexity, see Copyright Exceptions, *About* <https://copyrightexceptions.eu/static/about/>.

74 See Bernt Hugenholtz 'Why the Copyright Directive is unimportant, and possibly invalid' (2000) 22(11) EIPR 499; Marie-Christine Janssens 'The Issue Of Exceptions: Reshaping the Keys to the Gates in the Territory of Literary, Musical and Artistic Creation' in E Derclaye (ed) Research Handbook on the Future of EU Copyright (Edward Elgar Publishing Cheltenham 2009) 330-32; and Jonathan Griffiths, 'Unsticking the centre-piece – the liberation of European copyright law?' (2010) 1 JIPITEC 87.

75 Guibault (n 72).

76 Tito Rendas, *Exceptions in EU Copyright Law: In Search of a Balance Between Flexibility and Legal Certainty* (Wolters Kluwer, 2021), 154-162.

77 For example, Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC, OJEU L 130/92 (DSM Directive).

differently in many jurisdictions. Given the conceptual and definitional ambiguities present in such provisions, it is hard to imagine how coherent application *could* come about spontaneously. The following analyses a peculiar exception in the shopping list with a repair focus, assesses its implementation in some member states, and explores how it might find benefit from a more coherent interpretation which supports participatory repair throughout the European Union.

## I. Directive 2001/29/EC's "Repair Exception"

**43** The Repair Exception is found at Article 5(3)(l) of the InfoSoc Directive. It provides an exception to the rights of reproduction and communication to the public for "use in connection with the demonstration or repair of equipment". This provision has not been interpreted in a reported judicial decision, and seldom has it received much attention from commentators or scholars.

**44** The prevailing view among experts is that the Repair Exception allows repairers and sellers of devices like radios and televisions to play media or broadcasts in public to demonstrate proper functioning of the device.[78] And as will be contended in the following sections, this is an accurate yet incomplete view of the Repair Exception's potential scope and application. The following examines the Repair Exception's genesis, its varied implementation across EU member states, and how its status as an autonomous concept of EU law can support broader access and dissemination of repair manuals.

### 1. Genesis of the Repair Exception

**45** It is no surprise that the Repair Exception was not at top of mind for legislators during the procedure leading to the InfoSoc Directive's enactment. This legislative procedure (1997/0359/COD) resulted in four main iterations of the draft directive[79]; none of which produced discussion or debate regarding an exception for the purposes of repair or demonstration of equipment. By all accounts, it appears as though the Repair Exception was added by the Council (along with many other provisions in the shopping list) without much comment near the end of the InfoSoc Directive's ordinary legislative procedure.[80]

**46** In line with the InfoSoc Directive's Recital 32, however, the Repair Exception plays a role in Article 5(2) and 5(3)'s intent to mirror the pre-existing legal traditions within EU member states.[81] In furtherance of that goal, the Repair Exception reflects a long-standing exception to copyright for electronics repairers and retailers in Germany. There, the German *Act on Copyright and Related Rights* (UrhG)[82] includes at §56 an exception which states (in part, and when translated to English[83]):

> **Reproduction and communication to public in commercial enterprises**
>
> (1) In commercial enterprises which distribute appliances for making or communicating video or audio recordings, for the reception of broadcasts, or for electronic data processing, or which repair them, works may be transferred onto video or audio mediums, or onto data carriers, made perceivable to the public using video or audio recordings, or onto data carriers, and broadcasts may be made perceivable to the public and works may be make available to the public where it is necessary to demonstrate such appliances to customers or to repair them.

78 See Bently, "The Return of Industrial Copyright?" (Paper No 19/2012) at fn 149, "[T]hat provision was intended to permit repairers and sellers of radio and televisions to play and show broadcasts in public in order to check that and demonstrate that, the equipment works..."; and Thomas Dreier & Bernt Hugenholtz, *Concise European Copyright Law* (2nd ed, Wolters Kluwer, 2016), 467, where the authors write that "[an] example of this limitation is the communication to the public of audiovisual works in TV sets in an electronics store".

79 For a timeline of events during the legislative procedure leading to the InfoSoc Directive (including early versions of the Directive), see European Parliament, 'Legislative Observatory: 1997/0359(COD)' <https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=1997/0359(COD)>.

80 European Commission, "Communication from the Commission to the European Parliament pursuant to the second subparagraph of Article 251(2) of the EC Treaty concerning the common position of the Council on the adoption of a Directive of the European Parliament and of the Council on the harmonization of certain aspects of copyright and related rights in the information society", SEC/2000/1734.

81 Rendas (n 76), 163-165.

82 Copyright Act of 9 September 1965 (Federal Law Gazette I, 1273), as last amended by Article 1 of the Act of 28 November 2018 (Federal Law Gazette I, 2014)

83 Bundesministerium der Justiz und fur Verbraucherschutz, *An Act on Copyright and Related Rights* (Germany) <https://www.gesetze-im-internet.de/englisch_urhg/englisch_urhg.html>.

**47** This exception was first included in German copyright law in 1965, and amended in 2003 to expand its scope to electronic data processing equipment.[84] It was introduced primarily in response to the proliferation of audio-visual devices like reel-to-reel tape recorders and cassette players which had been marketed to consumers for the first time.[85] Long before the internet and online advertising, displaying the functionality of these devices in stores was the primary means though which consumers were introduced to them. The unavoidable copyright implications of having protected works being publicly perceptible in shops and public places necessitated some form of legislative intervention,[86] and the result was §56.

**48** A few aspects of the German Copyright Act's §56 are worth highlighting. First, the exception applies only to "commercial enterprises", and specifically those which are in the business of selling, repairing, or distributing devices for audio-visual recording. Secondly, the exception only applies to a narrow class of technologies – namely, those necessary to display audio-visual works, receive broadcasts, or process electronic data. Third, §56 contains its own limitation in that it permits these activities only to the extent that they are *necessary* for demonstration or repair purposes. As will be discussed in relation to InfoSoc's Repair Exception as an autonomous concept, these caveats result in a far narrower German exception than what is otherwise permitted at the EU level.

## 2. Member State Implementation

**49** Perhaps unsurprisingly, the peculiar origin of the Repair Exception in Germany has permitted varying interpretations in its implementation across EU member states.[87] Some member states, including Austria, Croatia, and the Czech Republic, mirror the German "commercial enterprises" approach quite closely. For example, Croatia's exception applies only to businesses which sell equipment for audio and video reproduction or reception.[88] The Czech Republic likewise restricts its exception for necessary uses of works to demonstrate or repair equipment "for a customer".[89]

**50** Other member states, however, have taken a different approach in their implementation by including further caveats. One such additional caveat, found in Slovakia[90], is that the otherwise infringing act must be facilitated directly by the equipment being repaired or demonstrated. This approach is much more restrictive than what appears in the InfoSoc Directive. It almost certainly excludes the unauthorised reproduction and communication of repair manuals online. This is because the device being repaired in such cases is distinct from the device used to reproduce or communicate the manual.

**51** Another narrow interpretation found in Romanian law is limiting the Repair Exception to "extracts" of works and only where necessary for the purposes of "testing" equipment "at the time of manufacture or sale".[91] This interpretation presumptively excludes repair activities on two grounds. First, "testing" can hardly be interpreted as applying the whole of repair activities, and secondly, repair is virtually always necessitated *after* the point of manufacture or sale. Slovenia largely shares this "necessity for testing only" approach.[92]

**52** In at least one instance, the Repair Exception has been implemented as applying only to broadcasts of works. Though perhaps less instructive in a post-Brexit world, the United Kingdom's implementation of the Repair Exception applies only to broadcasts shown in public which are otherwise necessary for the purposes of repairing equipment used for broadcasting.[93] Like the necessity for testing approach seen in Romania and Slovenia, this narrower interpretation would also exclude the reproduction and communication of repair manuals

84 Dreier/Schulze/Dreier, 6. Aufl. 2018, UrhG § 56 Rn. 1, 2.

85 Fromm/Nordemann/Boddien, 12. Aufl. 2018, UrhG § 56 Rn. 1-4.

86 Dreier/Schulze/Dreier, 6. Aufl. 2018, UrhG § 56 Rn. 1, 2.

87 For an overview of the implementation of the InfoSoc Directive's non-mandatory exceptions across EU member states see European Parliament, *Copyright Law in the EU: Salient features of copyright law across the EU Member States* (European Parliamentary Research Service, June 2018) PE 625.126 <https://www.europarl.europa.eu/thinktank/en/document/EPRS_STU(2018)625126>.

88 *Copyright and Related Rights Act* (CRRA) (Croatia) Art 95.

89 Copyright and Rights Related to Copyright and on Amendment to Certain Acts (Czech Republic) Art 30b.

90 *Copyright Law,* National Law – Act No 185/2015 Coll (Slovakia) s 56.

91 *Law on Copyright and Neighbouring Rights* of 14 March 1996, National Law No 8/1996 (Romania) Art 37(1).

92 *Copyright and Related Rights Act* of 30 March 1995, last amended on 15 December 2006 (as in force from 13 January 2009) (Slovenia) Article 57 <http://www.uil-sipo.si/fileadmin/upload_folder/zakonodaja/ZASP_EN_2007.pdf>.

93 *Copyright, Designs and Patents Act,* 1988 c 48, 72(1B) [*UK CDPA*].

over the internet – particularly in relation to devices and equipment unrelated to broadcasting.

**53** In other cases, however, EU member states have implemented a quite broad and liberal interpretation of the Repair Exception in their copyright statutes. Lithuania[94] and Malta[95], for example, follow most closely the wording found in the InfoSoc Directive and impose a blanket copyright exception to the rights of reproduction and communication to the public "in connection" with the repair of devices. No other caveats or conditions are attached to those exceptions. Finally, Poland stands out as adopting the most permissive approach by permitting all uses of works in connection with "any repair" of equipment.[96]

**54** In all, only 10 of the EU's 27 member states have implemented (or partially implemented) the Repair Exception in their national copyright laws. As the above demonstrates, determining whether a directive's provision has been implemented is not always a neat and tidy or binary inquiry. But in general, the Repair Exception's ambiguous wording provides member states with significant flexibility in taking their own approaches to implementation.

**55** Divergence in the implementation of this exception reveals ambiguities on several fronts. The first is whether the repair must be carried out for commercial purposes. Second, whether the device being repaired must be the same device used to perform the otherwise infringing act. And third, whether the exception applies to the whole of copyrightable subject matter, certain types of works, or only extracts of such works. Where the approach in Poland looks to support the reproduction and widespread communication of repair manuals, the Romanian and Slovenian implementations clearly do not.

**56** Some divergences should be expected as the result of national discretion. However, the range of approaches to the Repair Exception's implementation reveals very large deviations in the potential scope and application of the exception throughout the EU. To this end, the varying approaches to the Repair Exception across EU member states goes far beyond mere formal methods of implementation and extends to significant substantive differences in the exclusive rights and permitted uses of works.[97] On its face, this divergence runs contrary to the overall harmonising objective of the InfoSoc Directive.

## 3. The Repair Exception as an Autonomous Concept of EU Law

**57** Though surveying the varying implementation of the Repair Exception is helpful in determining the breadth of its interpretation throughout the EU, these implementations are not in themselves determinative of its meaning and scope. This is because the segments and wording within the exceptions and limitations found in the InfoSoc Directive's non-mandatory shopping list have been repeatedly recognised as "autonomous concepts of EU law" by the CJEU.[98] This means that, while member states may decide whether to implement an exception or limitation, they *may not* unilaterally determine its content or substantive limits.[99] Rather, the content and meaning of these exceptions and limitations is left to the CJEU.[100]

**58** The implications of the autonomous character of optional exceptions and limitations have been heavily discussed by experts[101], particularly in relation to the residual discretion of EU member states to tailor these provisions to their national traditions. The prevailing and contemporary view is that the legislative and interpretive freedoms of member states have gradually diminished in response to an increasingly harmonising role played by the CJEU.[102] Of particular note on this point is the CJEU's decision in *ACI Adam,* where the court made clear that the discretion left to member states is limited to the choice of whether to implement an exception or limitation, and not to determine its substantive

94 *Law of 18 May 1999 No VIII-1185 on Copyright and Related Rights*, as amended (the Copyright Law), (Lithuania) Art 24(5).

95 *The Copyright Act of 1911,* National law – Chapter 415, (Malta) Art 9.1(t).

96 *The Copyright Act*, Ustawa z dnia 4 lutego 1994 r. o prawie autorskim i prawach pokrewnych (t.j. Dz. U. z 2017 r., poz. 880 ze zm), (Poland) Art 33(4).

97 C-516/17 *Spiegel Online* ECLI:EU:C:2019:625, 24.

98 Case C-201/13 *Johan Deckmyn and Vrijheidsfonds VZW v Helena Vandersteen and Others* ECLI:EU:C:2014:2132.

99 See Case C-467/08 *Padawan* ECLI: EU:C:2010:620, 32-36; and Case C-510/10 *DR and TV2 Danmark* ECLI:EU:C:2012:244, 33-36.

100 Christophe Geiger et al, 'Limitations and Exceptions as Key Elements of the Legal Framework for Copyright in the European Union – Opinion of the European Copyright Society on the Judgment of the CJEU in Case C-201/13 *Deckmyn*' (2015) 46 IIC 93, 97.

101 Rosati (n 71) 587

102 Justine Pila & Paul Torremans, E*uropean Intellectual Property Law* (OUP 2016) 331.

character.[103] In general, scholars have lauded this expansive role of the CJEU as being positive for the progressive development of copyright law and policy throughout the EU.[104]

**59** Despite the CJEU's harmonising role, the wording of various exceptions and limitations unavoidably results in a sort of practical or linguistic discretion held by member states. Transposition of these provisions into various national languages only further exacerbates these potential differences. It turns out that the nature and extent of that discretion, however, depends on the wording of the specific provision and whether the CJEU has already elaborated an autonomous interpretation of certain concepts contained within it.[105]

**60** To illustrate how this may apply to the Repair Exception, it is helpful to first examine two other exceptions in the InfoSoc Directive's shopping list. The first is the quotation exception found at Article 5(3)(d). It contains a caveat that the use of a quotation is permissible "...to the extent required by the specific purpose". Second is the press reporting right found at Article 5(3)(c), which contains a qualification that uses are permitted "...to the extent justified by the informatory purpose". In both cases, these are determinations which are reached *ex post,* and as such, only national courts can effectively determine their threshold in each case. Logically, this necessitates a reasonable degree of discretion left for member states.

**61** Reconciling this point with the narrow discretion declared in earlier CJEU decisions was one of the core issues for the CJEU in *Spiegel Online*.[106] There, the CJEU held that the inclusion of open norm wording like that found in Articles 5(3)(c)-(d) evidences significant discretion left for member states. This discretion is nevertheless inherently limited by the three-step balancing test found at Article 5(5).

**62** Unlike the quotation or press reporting exceptions, the Repair Exception is without reference to open norms or *ex post* weighing factors. It is unequivocal and broad in scope by permitting uses of copyright works "in connection with the repair...of equipment", full stop. Along with the parody exception found at Article 5(3)(k) and the "incidental inclusion" exception found at Article 5(3)(i), the Repair Exception has been described as a "prototype provision" for national law implementation.[107] By "prototype", it is regarded as a standard against which national implementations can be measured. And based on the CJEU's existing caselaw, it is not clear whether further conditions or narrowing of prototype provisions (as shown in the previous section) are permitted in the absence of open norms indicating a conferral of discretion to member states.[108] Some experts have even proposed transposing literal copies of prototype provisions like the Repair Exception into national laws to create semi-open norms that better respond to social and technological change.[109]

**63** The above reveals a need for elaboration and interpretation of the Repair Exception as an autonomous EU concept. As it stands currently, it is victim to a strange interplay of interpretive principles. On the one hand, it carries a theoretically independent and uniform meaning throughout the EU. On the other hand, it is worded in a way that leaves substantial ambiguity, leaving broad leeway for varying national implementations. And quite evidently, member states have responded differently to that ambiguity. This result is significant disharmony across the EU which may inevitably pose significant social and environmental costs by unnecessarily inhibiting participatory repair.

**64** Should the CJEU find occasion to elaborate upon the autonomous interpretation of the Repair Exception in the future, national courts will be bound to adopt that interpretation.[110] This would first require a request for preliminary ruling by a member state court and willing parties. Neither should be relied upon as inevitable. In the absence of such interpretive elaboration by the CJEU, it is worthwhile to explore how the Repair Exception might nevertheless be interpreted to bolster participatory repair activities by enabling the dissemination of repair manuals throughout the EU.

103 Case C-435/12 ACI Adam BV and Others v Stichting de Thuiskopie and Stichting Onderhandelingen Thuiskopie vergoeding ECLI:EU:C:2014:254, 34.

104 Rendas (n 76), 199-204.

105 *Ibid.*

106 Case C-516/517 *Spiegel Online* ECLI:EU:C:2019:625, 24-38.

107 Bernt Hugenholtz and Martin Senftleben, 'Fair Use in Europe: In Search of Flexibilities' (2011) Amsterdam Law School Research Paper No 2012-39, 14.

108 Daniël Joseph Wietse Jongsma, 'Creating EU copyright law: striking a fair balance' (Doctoral dissertation, Hanken School of Economics 2019) 212

109 Hugenholtz and Senftleben (n 107) 17.

110 Rendas (n 76), 204-208.

## E. Toward a Robust Repair Exception

**65** Like all autonomous concepts of EU law, the Repair Exception must receive independent and uniform interpretation.[111] In carrying out that interpretation, the CJEU examines the "usual meaning of the terms of the provision in everyday language, while also taking into account the context in which they occur and the purposes of the rules of which they are part".[112] As exemplified by its interpretation of "parody" and "under the authority", the usual meaning approach can be regarded as fairly established precedent going forward. The origins of a particular provision in EU law can also provide relevant contextual information for interpretation.[113] Of course, any interpretation reached must also fit within the larger parameters set by the InfoSoc Directive's three-step test found at Article 5(5) while furthering the public interest. The following assesses the potential scope of the Repair Exception's interpretation and how it may fit within these boundaries.

### I. "Use in connection with"

**66** The Repair Exception is worded differently from most of the other exceptions in Article 5(3). Rather than applying to uses for certain purposes, it speaks to uses "in connection" with repair or demonstration. While the notion of use "in connection" is common in the trademark realm[114], the concept is generally foreign to copyright law. This is not only the result of trademark law's peculiar notion of use, but also because exceptions and limitations to copyright are normally assessed in relation to the intended use or objectives of the user. For example, Article 5(3)(g) describes permitted use "during religious celebrations or official celebrations organised by a public authority". Further, Article 5(3)(k) permits use "for the purpose of caricature, parody or pastiche". These examples evidence a close relationship between the activity and the use in question. This can be contrasted quite clearly from the rather nebulous "in connection with" language found in the Repair Exception.

**67** Looking more widely at the language used elsewhere in the InfoSoc Directive offers some assistance here. The directive contains three other references to uses in connection with. The first is at recital 50, where it is clarified that InfoSoc does not alter the "protection of technological measures used in connection with computer programs..." as set out in Directive 91/250/EC (the "Software Directive"). The second is at Article 5(3)(c) which permits (in part), the "use of works or other subject-matter in connection with the reporting of current events...". Finally, Article 7(2) clarifies that the obligation to protect rights-management information will apply when such information is associated with a copy or a work, or "appears in connection with" a work when communicated to the public.

**68** Though there is very little joining together TPMs, news reporting, and rights-management information, there is a common denominator underlying these references. In each case, the notion of connected use implies an ancillary, secondary, or incidental association. It also implies a clear conceptual distinction between the otherwise infringing use and the activity. This stands in contrast to the religious celebrations and parody exceptions, which show a tight link between the activity and the use. Put simply, the Repair Exception's language privileges the activity over the use. It stands to reason, therefore, that permitted uses "in connection with repair" is broader and more permissive than an exception or limitation which permits uses only for a specific purpose.

**69** Despite the restrictive interpretation implemented in some member states, therefore, the Repair Exception permits a wide range of uses so long as they bear an ancillary or incidental relationship to repair. Notably, the requirement under Slovakian law for the equipment being repaired to also facilitate the otherwise infringing use finds no basis in the InfoSoc Directive. Further, the necessity requirement seen in Romanian, Slovenian, German, and Czech law also appear to be without basis at the EU level. Importantly, by permitting uses "in connection with" repair, Article 5(3)(l) permits the repair of equipment independent from that used to facilitate the act of reproduction or communication.

**70** When it comes to sharing electronic copies of repair manuals freely online for today's gamut of devices and equipment, the Repair Exception's "in connection with" language is important for a few reasons. For one, by including the repair of equipment independent from that used to perform the reproduction or communication, it significantly broadens the scope of "equipment". This language implies that it is not restricted merely to reel-to-reel tape recorders or media playback technologies involved in reproduction or communication, but also includes the

111 Deckmyn (n 10) 45.

112 Case C-119/12 *Josef Probst v mr.nexnet GmbH,* EU:C:2012:748, 20.

113 Case C583/11 P, *Inuit Tapiriit Kanatami and Others* v *Parliament and Council,* EU:C:2013:625, 50

114 Regulation (EU) 2017/1001 of the European Parliament and of the Council of 14 June 2017 on the European Union trade mark, Art 18 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R1001>.

repair of things like washing machines, lawnmowers, cars, barbeques, and electric skateboards. This vastly improves the utility and modern relevance of the Repair Exception and its potential to enable participatory repair throughout the EU.

**71** Secondly, "in connection with" also provides room for uses of repair manuals which are incidental or ancillary to the end repair activities. For example, some repair activities may be accomplished without reference to a manual, though nevertheless significantly aided by it. In these cases, the use of the repair manual is supplementary and in connection with repair, but perhaps not essential. In other cases, users may search online for and download a repair manual merely to determine whether the required task is within their skillset and competence. In the end, they may decide to opt for a professional repairer to carry out the task to ensure that it is done properly. By extending to uses in connection with repair, the Repair Exception would cover these types referential or supplementary uses of manuals as well.

**72** In sum, the scope of uses permitted by the Repair Exception should be interpreted broadly. The language used in the provision supports such an approach. Despite the narrow interpretation adopted in some member states which restricts its application to uses necessary for repair, or only in relation to specific classes of equipment, the wording of Article 5(3)(l) contains no such limitations. By permitting uses in connection with repair, the Repair Exception should be interpreted as permitting the use of repair manuals for a whole host of products, devices, and equipment in ways that directly or indirectly facilitate repair activities.

## II. "Repair"

**73** Though the Repair Exception can be interpreted as enabling a broad range of uses, it is important to clarify which activities fall within the ambit of "repair". The InfoSoc Directive does not define repair, and nor does it offer any interpretive aid in its recitals. For this reason, insight must be gained by looking to the ordinary meaning of the term along with its legislative context and purpose.

**74** According to the Merriam-Webster dictionary, repair means to "put into good order something that is injured, damaged, or defective", or to "restore by replacing a part or putting together what is torn or broken".[115] These conceptualisations of repair are straightforward, but there are nevertheless some remaining ambiguities. For instance, where is the boundary at which restoration or fixing of an article becomes a *de facto* replacement? And, when does repair transcend restorative work and amount to customisation or modification?

**75** Providing some assistance here, the concept of repair has rubbed shoulders with intellectual property principles on a few occasions in the past.[116] Some of the earlier interactions in this regard came in the form of caselaw centred on disputes between automobile manufacturers and aftermarket parts producers. One well-cited example is the 1986 UK House of Lords decision *British Leyland.*[117] The case was concerned with industrial copyright in the physical shape and dimensions of exhaust pipes, and whether the manufacture of aftermarket replacement pipes constituted infringement. The House of Lords decided that it did not and formulated a right to repair defence, citing the importance of repair to the public interest. The House of Lords defined repair as to "restore to good condition by renewal and replacement of decayed and damaged parts".[118] The necessary implication from this definition is that repair does not extend to the replacement of the entire object.[119]

**76** Another and more contemporary instance of judicial interpretation of repair in EU law is the ECJ's judgement in *Acacia Srl*[120] within the context of the Community Design Regulation[121] and the Community Design Directive.[122] At issue was the manufacture of replica aftermarket alloy wheel rims which were identical in design to those produced by Porsche and Audi. The dispute centred on an exception to community design rights which allow the reproduction of "parts of a complex product" for the purpose of repairing that product and whether the alloy rims fell

115 Merriam-Webster, 'repair' <https://www.merriam-webster.com/dictionary/repair> accessed 20 December 2021

116 For a more comprehensive overview of the interface between repair and different intellectual property rights, see Estelle Derclaye, 'Repair and Recycle between IP Rights, End User Licence Agreements and Encryption' in Christopher Heath and Anselm Kamperman Sanders (eds), *Spares, Repairs and Intellectual Property Rights* (Kluwer Law International 2009), 22-24.

117 *British Leyland Motor Corporation and Others v Armstrong Patents Company Limited* [1986] RPC 279 (UK).

118 *Ibid* 348.

119 Derclaye (n 116) 22.

120 Case C-435/16 *Acacia Srl v Pneusgarda and another C-397/16; Acacia Srl and another v Porsche AG* ECLI:EU:C:2017:992.

121 Council Regulation (EC) 6/2002 of 12 December 2001 on Community designs [2002] OJ L3/1.

122 *Ibid* Art 19(1).

within that exception. In analysing the boundaries of repair in this context, the ECJ found that the Community Design Regulation's repair clause requires that the part be "necessary for the normal use of the complex product or, in other words, if that if the part were faulty or missing, this would prevent such normal use"[123]. The ECJ went on to elaborate that:

> "Any use of a component part for reasons of preference or purely of convenience, such as, inter alia, the replacement of a part for aesthetic purposes or customisation of the complex product is therefore excluded from the 'repair' clause".[124]

**77** Though both *British Leyland* and *Acacia Srl* were concerned with replacement parts, their interpretations of repair are helpful for understanding its conceptual limitations within intellectual property theory. In broad terms, repair is restricted to restorative or ameliorative activities which ensure good functioning of an object or equipment. It does not include entire replacement of the article, voluntary modification, or adaptation.

**78** Though instructive, these conceptual boundaries do not materially narrow the types of activities that fall within the ambit of repair. Even within the context of restorative or ameliorative work, there is a broad range of potential activities. Such practices may include reverse engineering, diagnosis, measuring, testing, preventative maintenance, and rebuilding. It may also include recovery and redistribution activities such as salvaging and cannibalisation of parts, as well as remanufacturing.[125] All of these activities are directly relevant to participatory repair activities like those carried out in repair cafés and through the assistance of tool libraries.

**79** When combining this broad notion of repair with the Repair Exception's legislative purpose and objectives, the result is a quite promising platform for enabling participatory repair. Though the InfoSoc Directive makes frequent references to the importance of a "high level of protection" for rightsholders, its overall goal is to harmonise certain aspects of copyright throughout the EU. It also stresses the importance of the "smooth functioning of the internal market" and the public interest in promoting "education and teaching".[126]

123 *Acacia Srl* (n 120) 70.

124 *Ibid.*

125 Ricardo J Hernandez et al, 'Empowering Sustainable Consumption by Giving Back Consumers the "Right to Repair"' (2020) 12(3) Sustainability 850, 853.

126 InfoSoc Directive (n 5), Recital 14.

Vastly unequal access to repair information – and particularly on non-profit and participatory basis - significantly impairs these latter goals.

## III. TFEU's Principle of Sustainable Development

**80** Robust interpretation of the Repair Exceptions is also consistent with broader EU law objectives, and particularly Article 11 TFEU.[127] That provision creates an all-encompassing duty to integrate environmental protection and sustainable development in the policies and activities of the Union, including the administration and interpretation of its laws.[128] As articulated above, participatory repair and the diffusion of technical knowledge is crucial for curtailing the burgeoning tide of electronics waste, harmful resource extraction, and manufacturing processes incidental to the production and sale of modern devices. Therefore, the Repair Exception ought to be interpreted in a way that mitigates these impacts.

**81** The interpretation of EU law generally follows a teleological approach[129], and therefore Article 11 TFEU's broad call for integrating environmental protection and sustainable development into the interpretation of EU Directives functions as more than a mere cursory consideration or weighing factor. These principles apply directly to the interpretation of the Repair Exception and the InfoSoc Directive as a whole. Viewed within this context, interpreting the Repair Exception to enable and facilitate participatory repair is not only consistent with Article 11 TFEU, but is required by it.

**82** The foregoing demonstrates that the proliferation of restrictive design among today's computerised devices creates for a heightened public interest in the free and open access to repair manuals. In looking to the disharmony and lack of uniformity in member state implementation of the Repair Exception and the potential for asymmetrical facilitation of participatory repair, it is evident that a more uniform and permissive interpretation is both warranted and required. Though it is clear that EU policymakers should use every tool at their disposal to further sustainable development goals, questions linger about

127 The Treaty on the functioning of the European Union, last amended by the Treaty of Lisbon, OJ 2008 C115 (consolidated version) [TFEU].

128 Beate Sjåfjell, 'The legal significance of Article 11 TFEU for EU institutions and Member States' in Beate Sjåfjell and Anja Wiesbrock (eds), *The Greening of European Business under EU Law: Taking Article 11 TFEU Seriously* (Routledge 2015), 52.

129 *Ibid.*

the encroachment on exclusive rights held by copyright owners.

## IV. Interpretive Boundaries: The Three-Step Test

**83** As compelling as the public interest may be in the widespread dissemination and access to repair manuals, there are necessary limits to the Repair Exception's potential scope. A key limitation in this regard is the three-step test at Article 5(5) of the InfoSoc Directive. That provision requires that exceptions and limitations only be applied "in certain special cases which do not conflict with a normal exploitation of the work or other subject-matter and do not unreasonably prejudice the legitimate interests of the rightholder". Notwithstanding any of the Repair Exception's internal limitations, it must also satisfy the three-step test.[130] In general, the three-step test acts to create a presumption *against* the liberal interpretation of exceptions.[131] Experts have argued that the three-step test should be understood as an indivisible entirety and interpreted as such.[132] Nevertheless, the following canvasses how a robustly interpreted Repair Exception might find agreement with each of its elements.

### 1. "Certain special cases"

**84** The "certain special cases" requirement has been the subject of much discussion among scholars and experts. One position in the debate adopts a very qualitative view of special cases. Namely, that it requires the use be unavoidable and incidental in the normal course of a given activity.[133] In the case of the Repair Exception, this narrow conceptualisation has led to the view that it is permissible to reproduce or communicate works only to the extent necessary for repair, and on account of 'some clear reason of public policy'.[134]

**85** Adopting this constraining interpretation of "certain special cases" would obviously be problematic for enabling wider access to repair manuals. Unlike the reproduction or communication of works as facilitated by the equipment being repaired, online sharing of repair manuals is not strictly necessary and therefore theoretically avoidable. Moreover, the benefits of participatory repair will only be realised if these activities can proliferate beyond special cases. This constrained view of the certain special cases requirement has been persuasively rejected, however. In the well-cited *Declaration on a Balanced Interpretation of the "Three-Step Test" in Copyright Law,* notable copyright experts have contended that the certain special cases requirement simply requires some foreseeability within the scope of limitations and exceptions.[135]

**86** One way that a robust Repair Exception might comply with this element of the test is to restrict uses of repair manuals to non-commercial repair activities. This would enable participatory and community repair activities like those which occur in repair cafés and through tool libraries while ensuring consistency in the exception's application. With this additional caveat or limitation, the Repair Exception would resemble the non-commercial nature of virtually all other exceptions and limitations to copyright and therefore be largely foreseeable.

### 2. "Normal exploitation"

**87** The classical view of "normal exploitation" is a measurement of the effect of use on the actual or potential markets for a work.[136] More expansive interpretations have included an assessment of whether rightsholders *ought* to have control over the use in question considering competing rights and interests.[137] Irrespective of the view one takes on the meaning of 'normal exploitation', a robust Repair

130 Case C-403/08 *Football Association Premier League Ltd and Others v QC Leisure and Others* CJEU *Premier League* ECLI:EU:C:2011:631, 181.

131 Jonathan Griffiths, 'The "Three-Step Test" in European Copyright Law – Problems and Solutions' (2009) Queen Mary School of Law Legal Studies Research Paper 31/200, 441. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1476968> accessed 20 December 2021.

132 Reto Hilty, 'Declaration: A Balanced Interpretation of the "Three-Step Test" in Copyright Law' (2010) 1 JIPITEC 119, 120.

133 Martin Senftleben, *Copyright Limitations and the Three-step test. An Analysis of the Three-Step Test in International and EC Copyright Law* (Kluwer Law International 2004) 263.

134 *Ibid* 152.

135 Jongsma (n 108) 216.

136 World Trade Organization, "United States – Section 110(5) of the US Copyright Act: Report of the Panel" WT/DS160/R (15 June 2000) 6.183 <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/DS/160R-00.pdf&Open=True>.

137 Chrisophe Geiger, Daniel Gervais & Martin Sentfleben, 'Understanding the Three-Step Test' in Daniel J Gervais (ed), *International Intellectual Property – A Handbook of Contemporary Research* (Edward Elgar, 2015) 175.

Exception could comply with this element by clarifying its application. One approach in this to apply only to repair manuals which are produced by original equipment manufacturers. The presumption being that manufacturers of devices and technologies are generally not in the business of selling repair manuals, and therefore the copyright in these manuals is not the subject of normal exploitation. By creating this distinction, the Repair Exception would also account for the importance of copyright for third-party publishers like Haynes.[138] It would also remain largely effective in encouraging access to repair manuals for non-profit uses.

### 3. "Unreasonable prejudice"

**88** The third element of the three-step test has been defined as prejudice to legitimate interests of rightsholders where an exception or limitation "causes or has the potential to cause an unreasonable loss of income".[139] What is reasonable in each circumstance is far from clear. It could perhaps be inferred that direct economic competition with rightsholders is required for a loss to become unreasonable, but this is speculative.

**89** In any event, one approach to a robust Repair Exception which may ameliorate the concerns of unreasonable prejudice is to extend the exception only to manuals for products which have been on the market for some period or been succeeded by a new generation. For smartphones with relative short generations, the latter calculation would apply. For home appliances with relative long lifecycles, a fixed period for that product category could apply. In simplifying this calculation, this assessment could refer to the timelines as set out in the EcoDesign Directive's 2019 Implementing Regulations. These measures stipulate timelines for when manufacturers must provide repair information to professional repairers and various end-of-life and product lifecycle calculations.[140] Overall, limiting the Repair Exception's scope to prescribed time periods in this way would ensure that the legitimate interests of rightsholders are not unreasonably prejudiced.

138 See Part I.

139 World Trade Organization (n 136) 6-229.

140 For example, dishwasher manufacturers are required to provide repairers with repair information once a product has been on the market for two years. These timelines could be used as a reference to effectively measure the period of third-party repair manual exclusivity for product categories.

## F. Conclusion

**90** Repair has become increasingly front of mind for policymakers and the public throughout the EU in recent years. Repair enables secondary markets, reduces waste, and diffuses technical knowledge. It offers a way out of the current trajectory we find ourselves on, which risks exacerbating social inequality, further harming the environment, and concentrating technical knowledge in the hands of the few.

**91** Efforts at the EU level to enable wider access to repair manuals make an important step in this direction but fall short of supporting participatory repair activities and fostering a culture of repair. Industry-led commitments, with their limited and discretionary access to repair information, are both unreliable and insufficient. Legislative and policy reforms addressing repair impediments posed by copyright and other intellectual property rights are warranted. The foregoing analysis reveals one such impediment and how lawmakers in the EU might address it.

**92** The primary contribution of this article is its assertion that enabling broader dissemination and access to repair manuals is possible through an autonomous reading of the InfoSoc Directive's Article 5(3)(l). It appears to be the first in-depth analysis of this provision, including an assessment of its genesis and member state implementation. It is also the first to explore its potential as a platform for broader uses of copyright works in situations that transcend its original conceptualisation.

**93** To realise the potential benefits to the public interest that occasion participatory repair activities, the European Commission should develop guidance on the scope and interpretation of the Repair Exception. As it stands currently, the conventional wisdom concerning the Repair Exception's purpose results in a narrow interpretation with limited utility in the modern world. Failure to address how this exception may remedy the pressing social, economic, and environmental costs brought about by un-repairability is a missed opportunity to achieve meaningful progress on these issues.

**94** In the absence of the European Commission's clarification of the Repair Exception's interpretive scope, it is hoped that this article can serve as a foundation for future research in this area. This analysis may serve as a platform for future inquiries into Repair Exception's role in removing barriers to repair posed by other uses of copyright works. Future research may also explore the extent to which a broad interpretation of the InfoSoc's Repair Exception may influence and inform other intellectual property regimes that impact repair, including trademark, industrial design, and patent law.

# Disappearing Authorship

## Ethical Protection of AI-Generated News from the Perspective of Copyright and Other Laws

by **Alžběta Krausová and Václav Moravec***

**Abstract:** Artificial intelligence (AI) has been widely recognized as an important game-changer in our digital society. With help of AI, we are currently able to automate a number of various tasks, including creation of visual, musical, or textual content. Ethical approach to design, development and utilization of AI systems as well as their legal compliance and robustness are defined as prerequisites of building trust and adoption of the technology. In this paper we analyze whether law supports ethics in the specific domain of automated journalism by examining principles of accountability, responsibility, and transparency (the ART principles) from the perspective of legal interests protected by copyright and other laws. Other factors influencing ethical decision-making process, namely specificities of a business model and perception of authorship, are also taken into account. We present results of a recent pilot qualitative study illustrating that perception of authorship is closely related to perception of agency and responsibility. Our findings show that the current Czech law neither incentivizes implementation of the ART principles nor perception of agency in relation to AI systems for automated journalism. Perception of disappearing authorship may, thus, also lead to perception of disappearing responsibility. In order to solve these problems, we suggest introduction of new legal obligations and adaptation of existing personal rights to protect authors involved in the design of AI systems.

Keywords: artificial intelligence; authorship; copyright law; ethics; journalism; personal rights



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## A. Introduction

1 Artificial intelligence (AI) has been widely recognized as an important game-changer in our digital society. Some even call it as "the new electricity"[1] with the potential to completely transform the way our society functions. With help of AI, we are currently able to automate a number of various tasks, including creation, selection and recommendation of visual, musical, or textual contents as well as tailoring those contents to individual needs or preferences of those who consume the contents.

2 The level of deploying and using AI systems by society is conditioned by the level of people's trust in these systems.[2] Ethical approach to designing, devel-

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1 Catherine Jewell, 'Artificial intelligence: the new electricity' (*WIPO Magazine*, June 2019) <https://www.wipo.int/wipo_magazine/en/2019/03/article_0001.html> accessed 1 April 2021.

2 Alan F. T. Winfried and Marina Jirotka, 'Ethical governance is essential to building trust in robotics and artificial intel-

oping and utilization of AI systems is considered as one of the prerequisites of building such trust and, therefore, should apply to AI systems developed in the European Union. Other prerequisites is their compliance with law and their robustness.[3] Policy-makers presume that an ethical approach and legal compliance go hand in hand and cannot be contradictory. This presumption, however, should be subjected to scrutiny.

**3** Within this paper we examine a particular case of interplay between ethical principles and requirements on AI systems and legal norms protecting copyright from the perspective of interests of those who design, deploy and use these systems. As an example we shall examine one of the most prominent applications of AI content creation and also a specific subset of discussions on copyright protection of authorship – the field of automated journalism (also known as algorithmic journalism or robot journalism).

**4** The purpose of automated journalism is to create AI-based software capable of creating textual news created from machine-readable data. Such software aims to replace routine work of journalists who are often forced to simply describe facts in a manner that does not require original creative thinking. This is mainly applicable in areas such as sports news, weather news, or reports about changes at financial markets.

**5** We chose the area of automated journalism as in general there are doubts about "creativity" of AI and if "works" generated by this technology can even qualify for copyright protection. With regard to journalism, there are also constraints on copyright protection and some routine texts produced by human journalists may not be protected. At the same time a rigorous ethical approach in this sphere is necessary as automated journalism has a great potential to influence the public space and also the democracy. There are various applications that might for instance help journalists with verification of facts, finding the appropriate resources, etc. Automated journalism also poses interesting questions such as questions regarding perceptions of readers at to the credibility of contents written with help of AI. However, the existing research is contradictory. The research suggests that some people trust to computer authors less than to human authors,[4] some people consider texts written by robots as more credible,[5] and some people attribute higher credibility to the combined authorship of humans with robots.[6] Automated journalism is sometimes described also as a "social process" in which the news are communicated between humans and machines.[7]

**6** In our opinion, the case of automated journalism illustrates that some ethical requirements can be difficult to achieve when they are confronted with particular legal regulation. We analyze ethical principles of accountability, responsibility and transparency from the perspective of individual legitimate interests and argue that the current Czech copyright laws and other related laws do not fully support these ethical principles. The analysis of this conflict is done from the perspective of EU activities on AI ethic and from the perspective of Czech law that is based on principles common in most European countries. As achieving ethical AI systems depends on actions of involved stakeholders as well as actors, we also examine the process of decision-making and factors influencing the process.

**7** Apart from ethical guidelines and respective law, the crucial factors to consider are also a) how journalists themselves perceive their role in creating these AI-based systems and b) how do they perceive protection of their intellectual property relative to such systems. Perception of their authorship as one of the factors in a decision-making process can influence their ethical considerations with regard to designing and outcomes of systems for automated journalism. Therefore, we support our overall analysis with a recent pilot qualitative study that describes the practice of news automation in the Czech News Agency (CNA) and in the daily economic newspaper E15 as well as views of journalists who co-design and use these intelligent systems.

ligence systems' (2018) Philosophical Transactions of the Royal Society A <https://doi.org/10.1098/rsta.2018.0085> accessed 1 April 2021.

3 High-Level Expert Group on Artificial Intelligence, 'Ethics Guidelines for Trustworthy AI' (*European Commission*, 8 April 2019) <https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai> accessed 15 January 2022.

4 T. F. Waddell, 'A Robot Wrote This?' (2018) 6(2) Digital Journalism <https://doi.org/10.1080/21670811.2017.1384319> accessed 1 April 2021.

5 B. Liu and L. Wei, 'Machine Authorship In Situ' (2019) 7(5) Digital Journalism <https://doi.org/10.1080/21670811.2018.1510740> accessed 2 March 2021.

6 E. C. Tandoc Jr., L. J. Yao and S. Wu, 'Man vs. Machine? The Impact of Algorithm Authorship on News Credibility' (2020) 8(4) Digital Journalism <https://doi.org/10.1080/21670811.2020.1762102> accessed 1 April 2021

7 S. C. Lewis, A. L. Guzman and T. R. Schmidt, 'Automation, Journalism, and Human–Machine Communication: Rethinking Roles and Relationships of Humans and Machines in News' (2019) 7(4) Digital Journalism <https://doi.org/10.1080/21670811.2019.1577147> accessed 2 March 2021.

The study illustrates that *perception of authorship is closely related to perception of agency and responsibility*.

**8** In order to align the existing ethical principles and copyright law, the paper examines existing models of potential legal regulation and consequently suggests legal measures that would promote adopting ethical behavior in design and use of AI systems. These measures aim to prevent identified shortcomings in law and to utilize protection of personal rights in order to increase own perception of agency, responsibility and, thus, ethical behavior.

## B. Ethical Design and Utilization of AI Systems

**9** Ethical design and ethical utilization of AI systems is one of the priorities of the European Union. In order to stay competitive with the rest of the world, the EU aims to ensure trust of users in AI systems by guaranteeing that AI systems developed within the EU will provide its users with guarantees of human rights protection. In particular, "the EU seeks to remain faithful to its cultural preferences and its **higher standard of protection against the social risks** posed by AI – in particular those affecting privacy, data protection and discrimination rules – unlike other more lax jurisdictions."[8]

## I. Trustworthy AI

**10** As the core principle, the EU defined a "human-centric approach" to AI. This approach should ensure that AI systems would be used "in the service of humanity and the common good, with the goal of improving human welfare and freedom."[9] In this regard, the EU promotes development and use of so called "trustworthy AI". This concept requires AI systems to be lawful (i.e. compliant with laws), ethical (i.e. adhering to ethical principles and values), and robust (i.e. safe, secure and reliable) at any stage of their life cycle.[10]

**11** Trustworthy AI systems must follow four basic principles – respect for human autonomy, prevention of harm, fairness, and explicability. At the same time, in practice trustworthy AI systems need to meet seven key requirements, which should be ensured both by technical and non-technical methods: "(1) human agency and oversight, (2) technical robustness and safety, (3) privacy and data governance, (4) transparency, (5) diversity, non-discrimination and fairness, (6) environmental and societal well-being and (7) accountability."[11] These requirements need to be operationalized in every stage of the AI systems' life cycle. This means that relevant stakeholders need to be actively involved in the process of assessment whether a particular AI system keeps fulfilling the requirements and whether adopted solutions as well as outcomes of the operation are in line with the above mentioned principles and requirements.

## II. Responsible AI

**12** The general concept of human-centric approach to AI needs to be developed further as use of AI in society is a complex challenge. One of the approaches how to face the multi-faceted reality and ensure as complex approach as possible is the concept of "responsible AI".

**13** The responsible AI is based on three main principles – Accountability, Responsibility, and Transparency.[12] These principles correspond to specific characteristics of AI systems – interaction with the environment, autonomy, and adaptability.

**14** The *principle of accountability* means that a system itself is able to explain own actions and that its designers are able explain the rationale (moral values and social norms) beyond the systems design. The principle thus refers to the ability to explain moral reasons. The *principle of responsibility* means that although AI systems are autonomous to a certain degree, we cannot avoid responsibility of humans for both the design and actions of these systems. The principle thus refers to the obligations of various stakeholders to behave in a certain way with regard to development, manufacturing, selling and using AI systems. The *principle of transparency* means that although AI systems adapt and develop, stakeholders need to be able to "describe, inspect and reproduce the mechanisms through which AI systems make decisions and learn to adapt to their environment"

8 T. Madiega, 'EU guidelines on ethics in artificial intelligence: Context and implementation' (*European Parliament*, September 2019) <https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/640163/EPRS_BRI(2019)640163_EN.pdf> accessed 2 March 2021.

9 High-Level Expert Group on Artificial Intelligence (n 3) 4.

10 ibid 5.

11 ibid 2.

12 Virginia Dignum, 'D1.3 Humane AI Ethical Framework. HumanE AI: Toward AI Systems that Augment and Empower Humans by Understanding Us, our Society and the World Around Us' (*Humane AI Net*, 12 November 2019) <https://www.humane-ai.eu/wp-content/uploads/2019/11/D13-HumaneAI-framework-report.pdf> accessed 27 February 2021.

and need to be "explicit and open about choices and decisions concerning data sources and development processes and stakeholders."[13] The principle thus refers to the ability to explain the particular technical solution, including the data and algorithm use, the rationale for the design process, and who are the involved stakeholders and what are their interests.

**15** The principles show that the *responsible AI* is oriented on three levels at which an ethical approach must be adopted: a) ethics by design, i.e. ethical reasoning capabilities of an AI system – accountability; b) ethics in design, i.e. utilization of methods allowing for assessment of ethical implications – transparency; and c) ethics for design, i.e. codes of conduct for involved stakeholders – responsibility.[14]

## C. Ethical Decision-Making of Involved Stakeholders and Actors

**16** Ethical design and deployment of AI systems require that involved stakeholders and individual actors act in an ethical manner. As what is moral can be perceived differently by each of these subjects, in practice institutions, organizations and enterprises come up with codes of ethical conduct. These usually serve as guidelines on how to behave in certain situations and what principles to keep in mind when making decisions in a particular field.

**17** An ethical decision-making process of involved stakeholders (organizations) and actors (their employees) is very complex. When looked at from the perspective of a person, the decision process takes into account various factors, such as individual attributes of a person, her personal environment, her professional environment (including codes of conduct), her work environment (including a corporate policy), the respective legal environment, and her social environment (including religious, humanistic, cultural, and societal values), that are considered through a cognitive process in which relevant acquired information is weighed for rewards and losses.[15] From a psychological perspective, the cognitive process of an individual can be influenced by factors such as "past experiences, a variety of cognitive biases, an escalation of commitment and sunk outcomes, individual differences, including age and socioeconomic status, and a belief in personal relevance."[16] These factors can also be reflected in a collective decision-making of an organization.

**18** As illustrated, in a decision-making process many factors come into consideration and psychology also plays an important role. In general, the theory of ethical decision-making distinguishes rationalist-based models, which are based primarily on moral reasoning, and non-rationalist-based models, which are based primarily on intuition and emotion.[17] Belonging to one or another group as an individual (i.e. having a certain thinking style) also influences whether a person is more likely to make more selfish or more altruistic decisions and how the person reacts to other people and their interests.[18] It has been evidenced that personal values are also reflected in work-related strategic decision-making.[19]

**19** Some of the factors (namely individual attributes) relate to inner characteristics and preferences of a person, i.e. to her intrinsic motivation, while other factors are determined from the outside – namely by laws, policies, codes of conduct, and values formulated by the society. These represent extrinsic motivation, i.e. "the motivation to do something in order to attain some external goal or meet some externally imposed constraint."[20] Ethics and law are typical examples of extrinsic motivation as there is typically a punishment for not complying. Therefore, ethical and legal factors should be considered as more in-

13 ibid 7–8.

14 Virginia Dignum, 'Ethics in artificial intelligence: introduction to the special issue' (2018) 20(1) Ethics and Information Technology <https://doi.org/10.1007/s10676-018-9450-z> accessed 2 March 2021.

15 M. Bommer, C. Gratto, J. Gravander and M. Tuttle, 'A Behavioral Model of Ethical and Unethical Decision Making' (1987) 6(4) Journal of Business Ethics <https://link.springer.com/article/10.1007/BF00382936> accessed 2 March 2021.

16 C. Dietrich, 'Decision Making: Factors that Influence Decision Making, Heuristics Used, and Decision Outcomes' (2010) 2(2) Inquiries Journal <http://www.inquiriesjournal.com/articles/180/decision-making-factors-that-influence-decision-making-heuristics-used-and-decision-outcomes> accessed 2 March 2021.

17 M. Schwartz, 'Ethical Decision-Making Theory: An Integrated Approach' (2016) 139 Journal of Business Ethics <https://doi.org/10.1007/s10551-015-2886-8> accessed 1 April 2021.

18 F. Liang, Q. Tan, Y. Zhan, X. Wu and J. Li, 'Selfish or altruistic? The influence of thinking styles and stereotypes on moral decision-making' (2021) 171 Personality and Individual Differences <https://doi.org/10.1016/j.paid.2020.110465> accessed 2 March 2021.

19 S. Lichtenstein, G. Lichtenstein and M. Higgs, 'Personal values at work: A mixed-methods study ofexecutives' strategic decision-making' (2017) 43(1) Journal of General Management <https://doi.org/10.1177/0306307017719702> accessed 2 March 2021.

20 B. Hennessey, S. Moran, B. Altringer and T. M. Amabile, 'Extrinsic and Intrinsic Motivation', *Wiley Encyclopedia of Management* (2014).

fluential in the decision-making process than some other factors. Society requires that stakeholders and actors should act in compliance with both systems.

**20** In an ideal world, law and ethics would go hand in hand and support each other. However, the relationship between these two normative systems is rather complicated. As such, it has been subject to an extensive study. Law depends to a high degree on values adopted from other systems, such as ethics and religion, and provides them with a special status requiring obedience from members of the society.[21] The level of identification of law with ethics varies though – on one hand we can find norms that are fully identical with ethical norms, on the other hand, some legal norms have no ethical dimension at all.[22] In general, it is considered ethical to comply with law. However, in some situations people break law as they think they have moral reasons to do so because what law demands is unethical.[23]

**21** Despite the societal pervasiveness of these two normative systems and the motivation to act in line with them, which is reinforced with various sanctions, in practice it is obvious that many stakeholders or actors do not behave ethically or in compliance with law. The reasons are various – be it ignorance, incapacity, emotional rather than rational behavior, different personal ethical standards, or an (un)calculated risk. With regard to legal compliance, a calculated risk may lie in identification of shortcomings in law and legal procedures in order to circumvent the system and avoid otherwise applicable sanctions. In a business context, such behavior is sometimes referred to as "*evasive entrepreneurship*". The term refers to a "profit-driven business activity in the market aimed at circumventing the existing institutional framework by using innovations to exploit contradictions in that framework."[24] To facilitate legal non-compliance, stakeholders sometimes adopt practices leading to silencing employees' criticism by withholding information and restricting dialogue.[25]

**22** These cases show that not all stakeholders (and potentially actors) are interested in acting ethically and they exploit law to serve their purposes. The manner in which these subject do it depends on their business model or personal interests.

**23** Business models and personal interests are, however, not always only selfish. Some business models can be built on adopting rigorous ethical codes of conduct and strict legal compliance, build a good reputation and use it as their competitive advantage. Some individuals may also opt for altruism and the higher good, i.e. prosocial behavior.

## D. Copyright Protection of Interests of Involved Stakeholders and Actors

### I. Complexity of the Ecosystem Related to Automated Journalism

**24** When assessing a regulatory environment both in form of ethical and legal rules, the complexity of the regulated environment and the particular ecosystem need to be taken into account.

**25** As it has been shown, various business models reflect various values and indicate what particular interests stakeholders will take into account and how they will protect these interests. In order to assess the respective law, its use, and its relationship to ART ethical principles, one needs to know the context of how automated journalism operates in the Czech Republic.

**26** Current research on robotisation in news media[26] distinguishes three areas in which such robotisation applies – content creation, news gathering (gathering, sorting, and verifying information from sources), and news distribution (personalized news and advertising). In the Czech Republic, the application of AI has been developing mostly in the area of content creation, namely news. AI applications in the areas of news gathering and news distribution are less common. Compared to media from English-speaking countries, the automation of journalism in the Czech Republic has a delay of approximately a

21 Y. Dror, 'Values and the Law' (1957) 17 The Antioch Law Review 440.

22 Mark S. Blodgett, 'Substantive Ethics: Integrating Law and Ethics in Corporate Ethics Programs' (2011) 99 Journal of Business Ethics <https://link.springer.com/article/10.1007/s10551-011-1165-6> accessed 2 March 2021. See p. 40.

23 K. Greenawalt, *Conflicts of Law and Morality* (Oxford University Press, Inc. 1989).

24 N. Elert and M. Henrekson, 'Evasive entrepreneurship' (2016) 47 Small Business Economy <https://doi.org/10.1007/s11187-016-9725-x> accessed 2 March 2021. See p. 96.

25 E. Hickland, N. Cullinane, T. Dobbins, T. Dundon and J. Donaghey, 'Employer silencing in a context of voice regulations: Case studies of non-compliance' (2020) 30(4) Human Resource Management Journal <https://onlinelibrary.wiley.com/doi/10.1111/1748-8583.12285> accessed 15 January 2022.

26 Francesco Marconi, *Newsmakers. Artificial Intelligence and the Future of Journalism* (Columbia University Press 2020).

decade. This is mainly due to the complexity of the Czech language compared to English. In particular, there is an insufficient amount of suitable datasets for training neural networks. Moreover, there has been a lack of investment in the development and application of robotic journalism.

**27** The pioneers of automated journalism in the Czech Republic are the Czech News Agency (CNA), which is a national press agency and has a nature of a public service medium, and the daily economic newspaper E15. In 2018, the CNA started to develop a platform for automated election news making. By utilizing patterns, which were predefined by journalists, simple algorithms co-created final news on the results of municipal and senate elections.[27] In 2020, the CNA implemented a robotic journalist from the Prague Stock Exchange into own redaction system. The robotic journalist was developed within a joint research project of the Charles University, Czech Technical University, University of West Bohemia and the CNA.[28] Within a few seconds after the close of the exchange, this robotic journalist generates news on the results of the trading day without human intervention.[29] Since July 2020, the CNA also started to automate news on prices of fuel. In half of 2020, the economic newspaper E15 started to use the robotic journalist in own redaction system in order to enable studying differences between implementation of automated journalism at a public service medium (CNA) and at a commercial medium (E15).

**28** The current research suggests that such software can save around 30-40 minutes of work of a journalist for each automatically created news. Editors appreciate especially the speed of automated journalism. For instance, before implementing the robotic journalist, the E15 was not able to publish results from the end of the trading day as the Prague Stock Exchange provides final results at 16:35 each day and the editorial deadline of E15 is at 17:00. Moreover, editors also appreciate functionality of automated journalism as it unburdens human journalists from creating routine news texts and allows journalists to use their creativity for more complicated texts (such as analyses or commentaries). This Czech experience is similar to experience from abroad where journalists perceive AI systems as tools that assist them in their work.[30]

**29** The current experience indicates that there is a difference between implementation of automated journalism in a public service medium (CNA) and a commercial medium (E15). The CNA does not publish any of the automated texts without control of a human editor. The CNA thus uses a **hybrid model of AI application** in journalism when outputs are always *checked by a human*. On the other hand, the E15 publishes results of trading at the Prague Stock Exchange immediately after they are generated by software without any editorial control. This is done even despite occurrence of two errors that were caused in the past by providing the software with erroneous input data from Prague Stock Exchange's API. The E15 thus uses an **autonomous model of AI application** in journalism when there is *no intermediary* between the software and recipients of the automatically generated news. The research clearly shows how a particular business model influences practice.

## II. Copyright Protection and Interests in Relation to AI Systems

**30** The question about copyright protection of works created by computers and namely AI has appeared in the legal literature as early as in 1960s.[31] Since then quite a large number of literature has analyzed the question from various perspectives. Currently, there are two legislative models in the world: a) specific protection of computer-generated works (adopted for instance by the United Kingdom),[32] b) requirement on original creative activity performed by a human.[33] The latter model is applicable in the Czech Republic.

27 Václav Moravec, *Proměny novinářské etiky* (Academia 2020).

28 This system is based on machine learning techniques.

29 V. Moravec, V. Macková, J. Sido and K. Ekštein, 'The Robotic Reporter in the Czech News Agency: Automated Journalism and Augmentation in the Newsroom' (2020) 11 Communication Today 36.

30 A. K. Schapals and C. Porlezza, 'Assistance or Resistance? Evaluating the Intersection of Automated Journalism and Journalistic Role Conceptions' (2020) 8(3) Media and Communication <https://doi.org/10.17645/mac.v8i3.3054> accessed 1 April 2021.

31 R. C. Lawlor, 'Copyright Aspects of Computer Usage' (1964) 11 Bulletin of the Copyright Society of the U.S.A. 380.

32 The UK's Copyright Designs and Patents Act 1988 defines a computer-generated work in Section 178 as "generated by computer in circumstances such that there is no human author of the work" and "the author of a computer-generated work is deemed to be the person 'by whom the arrangements necessary for the creation of the work are undertaken'" (Smith, 2017).

33 A. Gaudamuz, 'Artificial intelligence and copyright' (*WIPO Magazine*, October 2017). <https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html> accessed 2 March 2021.

**31** As the second (prevalent) model has not been considered satisfactory, the main question, which the professional literature has traditionally focused on, is "*Who shall be the author of works produced by/with help of AI systems?*" A reply to this question shall determine the subject to whom the copyright protection of results generated by AI systems shall be granted. It is an important question but at the same time it is future-oriented. The proposed models and their appropriateness for future will be assessed in chapter F.I. The purpose of this chapter is different – to assess the current copyright protection and describe which interests the law currently protects with regard to AI systems, i.e. to reply to the question "*Who is granted authorship to AI systems and to results generated by them?*"

**32** The two described business models of the CNA and the economic daily newspaper E15 show that there are in general two levels that we need to analyze – the level of stakeholders (the CNA and the E15) and the level of their employees who in fact contribute to creation of the AI system for automated journalism.[34] Both the stakeholders and their employees have their own interests regarding copyright.

**33** As many other European copyright acts, the Czech Copyright Act (2000)[35] defines what can be considered as a copyrightable "work". With regard to AI systems, we need to break them down into their elements in order to determine the respective legal protection. Simply speaking, AI systems based on machine learning are algorithms that are derived from data provided to the systems for learning.[36]

**34** Algorithms are not protected by copyright. As algorithms are representations of procedures, principles, methods or formulas, law does not provide them with copyright protection not to prevent others from using these procedures. However, what is protected by copyright is the source code and the resulting computer program up to the degree that the source code is original.[37] The Czech law also grants copyright protection only if the author is a human (not an AI system). Questions as to whether an AI system can be considered as tool for creative creation of another AI system have not yet been resolved and would be most probably assessed individually in each case.

**35** Data can have various nature. They are not granted copyright protection per se as data usually refers to simple information, numbers, etc. However, there are situations when an AI systems learn from other art work – typically natural language processing systems learn from texts that can be copyrighted.[38] A collection of data can be also protected as a database either by *sui generis* rights, which provide special entitlements to a person who compiled the database, or by copyright.

**36** Given the complicated nature of AI systems, trade secret is sometimes considered as an appropriate tool for protection of economic investment in cases when copyright protection cannot be fully efficient.[39]

**37** With regard to authorship, the law distinguishes two types of rights that also correspond to different interests: moral rights and economic rights. *Moral rights* are typically granted to natural persons as an expression of connection between their intellectual activity leading to creation of a copyrightable work and their personality. Moral rights typically include the right to associate author's name with their work and the right to object to modifications of this work. *Economic rights* refer to the right to use a copyrighted work in various forms, request remuneration from others for use of this work, and prohibit others from use of the work. Granting the economic rights shall motivate people (and companies) to invest themselves into an intellectual creative process.

**38** With regard to AI systems created by employees for their employer, there are specific provisions protecting the economic investment of employers. Employers exercise economic rights on behalf of their employees if the respective work was created as to fulfill obligations from the labor contract. However, employees keep the moral rights and are entitled to additional reimbursement for their work in case the salary paid for the work gets into

34 For the sake of simplicity we do not take into account contractual relationships between partners of the joint research project and their individual contributions.

35 Act No. 121/2000 of the Collection of Laws of the Czech Republic, on copyright law and on rights related to copyright and on the amendment of certain laws (Copyright Act).

36 Ethem Alpaydin, *Machine Learning: the New AI* (The MIT Press 2016).

37 If copyright is contested, originality needs to be assessed case by case.

38 Utilization of copyrighted materials for machine learning can be problematic even despite the new EU directive 2019/790 that set out exceptions from copyright protection for the purposes of text and data mining for training AI systems. For more details see E. Rosati, 'Copyright as an obstacle or an enabler? A European perspective on text and data mining and its role in the development of AI creativity' (2019) 27(2) Asia Pacific Law Review <https://doi.org/10.1080/10192557.2019.1705525> accessed 1 April 2021.

39 H. Hammoud, 'Trade Secrets and Artificial Intelligence: Opportunities & Challenges' (*SSRN*, 29 December 2020) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3759349> accessed 2 March 2021.

an obvious imbalance compared to the profit an employer made out of the work. Regarding the authorship, law presumes that an employer can publish the work under own name, unless otherwise agreed with an employee.

## III. Special Case of Copyright in Automated Journalism

**39** Journalism represents a specific subfield in copyright law as some news are not protected by copyright law. For instance, the Berne Convention for the Protection of Literary and Artistic Works (1979)[40] does not provide protection to "news of the day or to miscellaneous facts having the character of mere items of press information" (Art. 2 par. 8 of the Convention). The same is valid in the Czech law. The Czech Copyright Act excludes "daily news or other data per se" from copyright protection (Art. 2 par. 6 of the Act). The reason for this is not to enable abuse of copyright law for monopolization of information.[41] The simple nature of information or news cannot be considered as 'creative' and, thus, be protected by copyright. However, there are other legal instruments allowing stakeholders (news agencies or newspapers) to protect their investment into producing news, such as protection against unfair competition or unjust enrichment. Design of AI systems for automated journalism can be also protected as know-how by trade secret.

## IV. Perception of Authorship

**40** Perception of authorship by journalists involved in designing and use of AI systems facilitating automated journalism and its outcomes is important when assessing their perception of own control, agency, and responsibility. These are also factors that influence ethical decision-making.

**41** The first experience of Czech journalists with automated journalism allowed us to conduct a pilot qualitative study on reflection of authorship in the environment of Czech editorial offices that utilize AI. The study was conducted in the form of in-depth semi-structured interviews that focused on perception of the notion of authorship in the traditional and robotic journalism. In September 2020, ten contributing editors including the editor-in-chief from the daily economic newspaper E15 participated in the study. In February 2021, ten journalists including the editor-in-chief from the CNA participated in the study. The research sample was designed to include contributing editors, editors, and editors-in-chief with experience in automated journalism. Therefore, the number of journalists from both newsrooms involved in the research was limited.

**42** The main research questions were:

1) How do you perceive the notion of authorship in the traditional journalism?

2) How has the notion of authorship changed with use of robotic journalism in situations when journalists contribute with their knowledge to development of this software and when the AI systems learn from their knowledge and texts?

3) How should we present the authorship of automatically generated texts to recipients of these texts?

**43** As to the first research question, all respondents stated that they consider authorship in journalism as important, as each author has own style with regard to use of language, richness of their vocabulary, or arranging facts, etc. Authorship is perceived more strongly in relation to opinion journalism (analyses, commentaries, features, or essays) than in relation to common news making. This corresponds to the rationale of copyright protection described above. Moreover, the respondents from the CNA often stated that perception of authorship is even weaker at the CNA than in other types of media as the CNA is a supplier of (mainly) news content to other media.

**44** As to the second research question, replies suggested that journalists, regardless of the nature of the media where they work (the news agency or the daily economic newspaper), do not think deeply about the transformation of the concept of authorship after deployment of robotic journalism. Based on additional questions of who is the author of an automatically created news and who should be stated as an author, the respondents started to set forth possible authors of such texts.

**45** Replies of respondents from the daily economic newspaper E15 can be divided into three groups, each of them having an almost equal number of respondents. The first group (4 respondents) was of the opinion that the authorship is collective, i.e. each person who had contributed to the development of the software should be considered as an author – programmers, software developers, or journalists who prepare patterns and datasets for training. However, the respondents were not sure how to name the author when such an automatically generated text is

40 Berne Convention for the Protection of Literary and Artistic Works (as amended on September 28, 1979).

41 I. Telec and P. Tůma, *Autorský zákon. Komentář* (C. H. Beck 2019)

presented to readers.[42] The second group (3 respondents) stated that it is impossible to determine authorship of automatically generated texts. The third group from the E15 (3 respondents) stated that the editor who works with the automatically generated texts should be considered as an author because she is responsible for the final text. Respondents clearly indicated their perception of *connection between authorship and responsibility*.

**46** Replies of respondents from the CNA were homogenous and indicated the notion of collective authorship. At the same time the respondents expressed that they had not felt as authors and that they had had "*nothing in common with the text*". This might be related to the weaker perception of authorship of agency news as illustrated above. Respondents also expressed that the collective authorship should be attributed to the news agency itself. Replies of respondents from the CNA were not divided into three groups like at the E15.

**47** As to the third research question, it is necessary to mention how the automated outputs are presented by the E15 and the CNA. The E15 places an icon of a robot next to the automatically generated news on results of trading at the Prague Stock Exchange and states under the text that "the news is generated by software with help of artificial intelligence". The CNA labels the automatically generated news with an abbreviation "rur". This refers to the theatre play R.U.R. by the Czech journalist and playwright Karel Čapek, in which the word "*robot*" was used for the first time in 1920. Interviews with journalists from both media suggested that they preferred transparent labelling of automatically generated texts as it strengthens credibility of the news media. Two respondents from the CNA indicated that there had been a discussion whether admitting robotisation of journalistic outputs would not give rise to pressuring the CNA by buyers of the news to reduce the price. At the end, the CNA decided for transparency towards their clients.

## E. Confronting Stakeholders' and Actors' Interests and Their Legal Protection with ART Principles

**48** The previous chapters have shown that when it comes to interests of stakeholders (news agencies) and actors (their employees), the situation is rather complex. In practice there are two business models of automated journalism – the hybrid model of AI application and the autonomous model of AI application. The hybrid model involving human checks is used by the public service medium – the CNA, while the autonomous model without human checks is used by a commercial medium – the E15. The E15's interests are to utilize speed of AI and to reduce the cost of news production by allocating editors to do other work than routine description of facts and numbers. On the other hand, the CNA's interests are to behave diligently and keep good reputation so they would be able to sell their products (news) to other media. With regard to copyright protection, it is in the interest of both media to prohibit others not to use news generated by AI systems without paying for such use. From the economic perspective, they need to be able to use work of their employees without any hindrances and the more they automate their work, the more they can be efficient.

**49** The obvious interests of the actors (employees of the media), which are also protected by law, are to be reimbursed for their work and to be attributed authorship. Law also protects dignity and personality of employees by fundamental human rights. From the economic perspective, employees need to keep their job and in case of changing the employer, they need to be able to show what they did in their previous job, i.e. to show their authorship. Moreover, in case their salary gets into an obvious imbalance compared to the profit an employer made out of AI systems, it is in the interest of an employee to be able to prove own role in designing the system.

### I. Principle of Accountability

**50** The principle of accountability requires that stakeholders and actors should be able to explain *moral decisions* that they took when designing and operating the AI system. With regard to automated journalism, the law does not per se require from neither stakeholders, nor actors to be able to explain themselves and as such this is more of an ethical issue.

**51** From the perspective of a stakeholder, it might be beneficial to explain the reasons for designing an AI system for automated journalism if the reasons are prevention of routine and repetitive work, designating more resources to quality journalism work, and securing timely delivery of information. On the other hand, law does not prohibit pure economic motivation without an ethical dimension. Despite the law requires each subject to respect good morals, it is very hard (and sometimes impossible) to prove the motivation and potential overall negative consequences of purely economically motivated behavior on the society. This is caused by the nature of law that is *primarily* oriented on overt behavior, not on

42 Some respondents who suggested collective authorship, however, also mentioned that the robot/software is the author.

internal motivation.[43] The law does not also require to make a prior ethical assessment. In practice, AI journalism systems are firstly developed and only consequently ethical aspects can be assessed based on the system's operation.

**52** The copyright law does not presume the ability to explain moral considerations. All it cares about is originality of work for granting protection. A specific case, however, is when the ability to explain is used in order to explain own role in a design of a system which would result in being granted authorship and, consequently, moral and economic rights to the system. This might be interesting for an employee who would attempt to get higher reimbursement for her work if profits gained by an employer get gets into an obvious imbalance with what has been paid to the employee.

**53** However, it is also possible to identify a general incentive for stakeholders and actors not to be able to explain their role in the system design – namely in cases when an AI system causes harm. The inability to explain own moral decisions can lead to the lack of evidence and, consequently, avoiding liability in cases where fault needs to be proven.[44] Moreover, a subject can claim that it was impossible to make any ethical consideration beforehand as one could not presume negative consequences due to the novelty of the technology and its unpredictability when confronted with society. Such a claim can also lead to *avoiding liability*. It needs to be justified and examined thoroughly but again, the lack of evidence may at the end be in favor of the subject who claims not to be able to provide explanation (or detailed explanation).

**54** The principle of accountability needs to be examined also from the perspective of authorship of those who contributed to creation of the system. The study on perception of authorship shows that journalists participating at design and later use of the respective AI system mostly do not feel as authors. This concept of disappearing authorship, however, results also in disappearing agency in the sense of own control over a system. The lack of agency can then be reflected in application of the two remaining principles.

## II. Principle of Responsibility

**55** The principle of responsibility, i.e. attributing liability to stakeholders and actors instead of AI systems and their obligation to behave in a certain way when developing and using AI systems, is highly relevant in relation to law. However, just like with the principle of accountability, copyright law does not expressly state any obligation to prevent harm. Copyright law protects (in line with the freedom of speech) even works that are controversial, do shock people, or even cause harm. Only originality of the work is important for granting copyright and providing economic and moral rights. In these cases, stakeholders can take *calculated risks* and behave not only unethically but also contrary to law as operation of an AI system can bring them benefits that would be higher than potential fines imposed by relevant administrative law. It is a question whether this is a shortcoming of copyright law in this regard or not. Not granting copyright to controversial, shocking, and even harmful content could on one hand result in a special way of censorship and on the other hand it could also cause much more intensive exploitation of unprotected content.

## III. Principle of Transparency

**56** The principle of transparency requires that stakeholders and actors should be able to explain *technical functioning* of an AI system. The principle of transparency is highly relevant for the sphere of automated journalism as the way of adopting this principle is also influenced by the business model of communicating with content's recipients.

**57** From the perspective of copyright law, transparency can, however, show as problematic. AI systems represent a competitive advantage. Parts of AI systems (such as data or an algorithm) are not protected by copyright per se so the other efficient means of protection is a *trade secret*. A complete transparency with regard to making the algorithm or data public could lead to threatening a stakeholder's investment into production of the system as someone might request publication of respective datasets and use them later for training own system.

**58** If an AI system causes any harm, such as publishing a text that contains public offence, discredits the status of a public official, ridicules a person, or discriminates, the stakeholder operating the respective AI system needs to provide an explanation if such an act is investigated within administrative proceedings. In such a case, the principle of accountability and the ability to explain comes into play. As shown, an inability to explain can result in more benefit for both stakeholders and actors.

43 Dror (n 21) 443.

44 Fault is in this case understood as an internal psychological relationship of a person to consequences of her action.

## F. Revisiting Models of Copyright Protection from the Perspective of AI Ethics

**59** Previous chapters have shown that the current set-up of legal rules does not fully support ethical approach to design and use of AI systems. Not implementing the principle of accountability may in some cases result in avoiding liability. With regard to the principle of responsibility, stakeholders may opt to take a calculated risk and act unethically and contrary to law as long as they profit from operation of a copyrighted AI system. The principle of transparency goes directly against economic interests of stakeholders and their employees as trade secret represents an appropriate and efficient tool for protection of own investments.

**60** Moreover, the pilot empirical study shows that actors involved in design and utilization of AI systems in automated journalism perceive their role of authors as diminishing. Majority of respondents expressed that authorship should be collective but that they personally had not felt as authors despite their contribution to the AI system. As the respondents had clearly put responsibility in relation to authorship, their perception of disappearing authorship can also result in their perception of *disappearing responsibility*. This is, however, not desirable from the perspective of AI ethics. Therefore, copyright law should strengthen protection of authorship in order to strengthen also the responsible approach.

## I. Proposed Models of AI Copyright Protection

**61** The chapter D.II. described how the current law protects authorship of AI systems themselves. At the same time it indicated that current copyright protection has not been deemed as sufficient and to determining authorship of works generated by AI systems. Despite there are a few countries[45] that granted authorship to "programmers",[46] most legal systems have only general rules and require that an author must be a human.

**62** In order to solve this problem of uncertainty in law, numerous analyses have been conducted in various jurisdictions as to find the best way how to determine and grant authorship to AI-generated works.[47] Authorship in the specific field of AI-generated news has been examined as well[48] including questions of liability.[49]

**63** Simply put, the common methodology for determining who should be considered an author of AI generated content is often to identify subjects involved in the ecosystem of AI generated content and then choose and justify which of these subjects should be granted copyright protection. The subjects are typically, programmers, people training systems, data providers (proprietors), data clerks and people who prepare and label datasets, or users of systems who initiate their operation. Some authors also analyze the option of granting authorship directly to an AI system or reinterpreting the notion of employment according to which AI systems would be considered as employees. This, however, presumes certain "subjectivity" of AI system which is not acceptable in the context of European values and policies that promote a "human-in-command" approach.[50] AI gen-

45 Examples are the Hong Kong, India, Ireland, New Zealand, and the United Kingdom.

46 Gaudamuz (n 33).

47 See for instance K. Hristov, 'Artificial intelligence and the copyright dilemma' (2017) 57 IDEA: The Journal of the Franklin Pierce Center for Intellectual Property 431; A. Kasap, 'Copyright and Creative Artificial Intelligence (AI) Systems: A Twenty-First Century Approach to Authorship of AI-Generated Works in the United States' (2019) 19 Wake Forest Journal of Business and Intellectual Property Law 335; B. Schafer, D. Komuves, J. M. N. Zatarain and L. Diver, 'A fourth law of robotics? Copyright and the law and ethics of machine co-production' (2015) Artif Intell Law <https://doi.org/10.1007/s10506-015-9169-7> accessed 1 April 2021; C. Weyhofen, 'Scaling the meta-mountain: Deep reinforcement learning algorithms and the computer-authorship debate' (2019) 87 UMKC Law Review 979; J. M. N. Zatarain, 'The role of automated technology in the creation of copyright works: the challenges of artificial intelligence' (2017) 31(1) International Review of Law, Computers & Technology <http://dx.doi.org/10.1080/13600869.2017.1275273> accessed 1 April 2021.

48 See for instance J. Díaz-Noci, 'Artificial Intelligence Systems-Aided News and Copyright: Assessing Legal Implications for Journalism Practices' (2020) 12(5) Future Internet <https://doi.org/10.3390/fi12050085> accessed 2 March 2021; T. Montal and Z. Reich, 'I, Robot. You, Journalist. Who is the Author?' (2017) 5(7) Digital Journalism <https://doi.org/10.1080/21670811.2016.1209083> accessed 2 March 2021; L. Weeks, 'Media Law and Copyright Implications of Automated Journalism' (2014) 4 New York University Journal of Intellectual Property and Entertainment Law 67

49 S. C. Lewis, A. K. Sanders and C. Carmody, 'Libel by Algorithm? Automated Journalism and the Threat of Legal Liability' (2019) 96(1) Journalism & Mass Communication Quarterly <https://doi.org/10.1177/1077699018755983> accessed 2 March 2021.

50 C. Muller, 'Opinion of the European Economic and Social Committee on 'Artificial intelligence — The consequences of

erated content can also end up as not copyrighted and free for use in public domain.

**64** Joint authorship is an approach that has been argued for a lot. This also corresponds to the Czech pilot study in which the majority of respondents considered the model of collective authorship as the most appropriate and fair. With regard to automated journalism, a suggestion was made to attribute collective authorship to a corporate entity and to drastically shorten duration of copyright protection.[51]

**65** The proposed models, however, do not solve the shortcomings of law that we have identified in our research. Their main motivation is to assess the best way to protect economic interests and incentivize further investments into development of AI systems.

## II. A Complex Approach to Regulation and Legal Protection Supporting AI Ethics

**66** Copyright protection has traditionally proven as a valuable regulatory tool. However, when challenged by disruptive technologies, such as AI, unprecedented questions arise. Given the global and pervasive impact of AI on our society, law now more than ever needs to become more supportive of ethical behavior.

**67** Our paper has identified certain shortcomings that cannot be solved by the copyright law as it stands now. Therefore, a more complex approach is necessary. In light of the case of automated journalism and perception of authorship we propose a two-level solution: a) introduction of new legal obligations, and b) adaptation of existing personal rights to protect actors involved in design of AI systems.

**68** The new legal obligations should mitigate shortcomings identified at each of the ART principles. As to the principle of accountability, law could introduce an obligation to conduct a *prior ethical assessment* of intentions and motivations for setting up an AI ecosystem. This ethical assessment would define control mechanisms for identification of potential harmful effects. In fact, this instrument would be an equivalent of a data protection impact assessment that is set out in the General Data Protection Regulation.[52] As to the principle of responsibility, law should make sure that a *calculated risk would not pay off* – for instance by increasing fines for breaches of law. As to the principle of transparency, law needs to introduce *safeguards on systems' inspections*.

**69** Personal rights' protection entails protection of identity of an individual. The copyright law in fact contests that AI generated news contain original intellectual creative activity of a human as the procedure of compiling the news has been derived from datasets and consequent compilations of news are only replicating principles that were hidden in the original training texts. However, it is important to note that those training texts that were authored by humans contain elements of unique personalities of their authors. What a machine learning system does is in fact *distillation of certain elements of original authors' identities*. In a wider context, authorship can be understood also in the sense of creating own identity which entails coming up with special ways of thinking and solving problems. In the past, an identity was rather an intangible concept. Nowadays, given the pervasive technology recording almost everything that we do, identity becomes quite tangible.

**70** Making actors involved in design of AI systems aware of how their personality contributes to shaping AI systems would probably increase perception of their authorship and, therefore, also responsibility. However, further study in this sense is needed. Utilization of the concept of personal rights with regard to authorship of AI systems and their work is also completely in line with the promoted human-centric approach to AI.

## G. Conclusion

**71** Our research has shown that integrating ethical principles and legal regulation is rather a complex task that needs to take into account a number of factors, including specificities of business models or psychological aspects. On the case of automated journalism we illustrated how different business models and their underlying motivation result in adopting different models of AI applications – hybrid or autonomous. Moreover, we have shown that despite being involved in design and use of AI systems, actors feel that their role in production of routine

artificial intelligence on the (digital) single market, production, consumption, employment and society (2017/C 288/01)' (*EUR-Lex*, 31 August 2017) <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52016IE5369> accessed 2 March 2021

51 Díaz-Noci (n 48).

52 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (Text with EEA relevance) [2016] OJ L119/1.

daily news is diminishing due to collective authorship. Given the nature of journalistic work and a lowered copyright protection, the perception of *disappearing authorship* is accepted quite well. On the other hand it also entails perception of *disappearing responsibility*. This phenomenon can then contribute to behavior in which law is circumvented. In that regard we proposed introduction of new legal obligations to support adopting ATR ethical principles in practice. Moreover, we proposed adapted utilization of personal rights protecting identity of an individual as a parallel protection to copyright law. This model will be developed in our further research.

# Judicial Dialogue and Digitalization

## CJEU Engagement with ECtHR Case Law and Fundamental Rights Standards in the EU

by **Evangelia Psychogiopoulou***

**Abstract:** The aim of this article is to study CJEU engagement with ECtHR case law in cases concerned with new technologies and digitalization via CJEU references to ECtHR rulings. The article examines the nature, extent and key characteristics of CJEU engagement with ECtHR case law and explores the effects of ECtHR judgments on CJEU adjudication. The analysis builds on CJEU decisions that address various aspects of digital innovation, attesting to the array of legal issues raised by digitalization and the distinct ways in which ECtHR case law is used by the CJEU. It shows that in cases dealing with digital change and transformation, CJEU interaction with ECtHR case law is not cosmetic: ECtHR case law corroborates, enriches and sometimes substantiates CJEU reasoning.

Keywords: Judicial dialogue; digitalization; new technologies; Court of Justice of the European Union (CJEU); European Court of Human Rights (ECtHR)



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## A. Introduction

1 New technologies and digitalization are altering people's lives. The digital economy, the rise of platforms, social media, search engines and the expansion of a wide range of digital services are changing how individuals communicate, connect, consume, spend their free time and do business. During the past few years, legislators and policy-makers have increasingly sought to address the challenges digitalization raises for law and regulation. Courts have also been confronted with cases pertaining to digital transformation. In a European setting in particular, the Court of Justice of the European Union (CJEU) and the European Court of Human Rights (ECtHR) have ruled on a number of cases with a digital component. In doing so, they have decided disputes with fundamental rights implications, particularly for the right to freedom of expression and its corollary, the right to information, the right to respect for private and family life, the right to protection of personal data and the right to intellectual property, amongst others.

2 The aim of this article is to explore engagement of the CJEU with the case law of the ECtHR specifically via references to the rulings of the latter in cases ruled by the former that deal with digital innovation. Does the CJEU use the jurisprudence of the ECtHR in its case law? If so, to what extent and in what ways? What are the effects of the jurisprudence of the ECtHR on the reasoning of the CJEU?

3 Judicial dialogue between the CJEU and the ECtHR has been a matter of extensive scholarly debate,[1] in light

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1 See indicatively Gráinne de Búrca, 'After the EU Charter of Fundamental Rights: The Court of Justice as a Human Rights Adjudicator? (2013) 20(2) *Maastricht Journal of European and Comparative Law* 168; Francesco Cherubini, 'The Relationship

of the complexities surrounding the relationship of the European Union (EU) and the European Convention on Human Rights (ECHR). The EU has not so far become a party to the ECHR, despite the fact that Article 6(2) of the Treaty on European Union (TEU) requires the EU to accede to the ECHR. Non-accession puts the EU Member States in an awkward position, even if the *Bosphorus* doctrine, developed by the ECtHR, attenuates this to some degree.[2] As aptly observed in the literature, "to the extent that the Member States have transferred many powers to the EU in fields covered by [the ECHR], they can no longer fully ensure compliance with their international obligations [under the Convention], and there arises a potential gap in the protection of human rights".[3] This gap has been partly filled by the CJEU through use of the ECHR as a "source of inspiration" that provides "guidelines" for the development of the general principles of EU law. The CJEU has typically proclaimed the following: "... fundamental rights form an integral part of the general principles of law, the observance of which [the CJEU] ensures. For that purpose the CJEU draws inspiration from ... the guidelines supplied by international treaties for the protection of human rights on which the Member States have collaborated or to which they are signatories ... .The European Convention on Human Rights has special significance in this respect ...".[4]

**4** For the CJEU, the ECHR has thus "special significance" but "does not constitute a legal instrument which has been formally incorporated into the legal order of the EU".[5] Only "as a result of the EU's accession the ECHR ... would", by virtue of Article 216(2) of the Treaty on the Functioning of the European Union (TFEU), "be binding upon the institutions of the EU and on its Member States, and would therefore form an integral part of EU law".[6] Such a position has been nuanced to some extent by Article 6(3) TEU, which declares that fundamental rights, as guaranteed by the ECHR, shall constitute general principles of the Union's law. Article 6(3) TEU makes clear that the rights set forth in the ECHR are more than sources of "inspiration", offering "guidance" for the general principles of EU law: they are general principles of EU law *themselves* and should be respected as such. At the same time, Article 52(3) of the Charter of Fundamental Rights (CFR) of the EU states that the CFR rights which correspond to rights guaranteed by the ECHR shall have the same meaning and scope as the corresponding ECHR rights and adds that the EU can grant more extensive protection than the ECHR. By means of Article 52(3) CFR, the ECHR is accordingly provided for as a *minimum* standard of human rights protection in the EU. Significantly, the *Explanations to the Charter* stipulate that the scope and meaning of the ECHR-corresponding rights of the CFR shall

between the Court of Justice of the European Union and the European Court of Human Rights in View of the Accession' (2015) 16(6) *German Law Journal* 1375; Cathryn Costello, 'The Bosphorus Ruling of the European Court of Human Rights: Fundamental Rights and Blurred Boundaries in Europe' (2006) 6(1) *Human Rights Law Review* 87; Sionaidh Douglas-Scott, 'A Tale of Two Courts: Luxembourg, Strasbourg and the Growing European Human Rights Acquis' (2006) 43(3) *Common Market Law Review* 629 and by the same author, 'The Court of Justice of the European Union and the European Court of Human Rights after Lisbon', in Sybe de Vries, Ulf Bernitz and Stephen Weatherill (eds), *The Protection of Fundamental Rights in the EU After Lisbon* (Hart Publishing 2013) 153; Federico Fabbrini and Joris Larik, 'The Past, Present and Future of the Relation between the European Court of Justice and the European Court of Human Rights' (2016) 35(1) *Yearbook of European Law* 1; Lize R. Glas and Jasper Krommendijk, 'From Opinion 2/13 to Avotinš: Recent Developments in the Relationship between the Luxembourg and Strasbourg Courts' (2017) 17(3) *Human Rights Law Review* 567; Guy Harpaz, 'The European Court of Justice and its Relations with the European Court of Human Rights: The Quest for Enhanced Reliance, Coherence and Legitimacy' (2009) 46(1) *Common Market Law Review* 105; Jasper Krommendijk, 'The Use of ECtHR Case Law by the Court of Justice After Lisbon: The View of Luxembourg Insiders' (2015) 22(6) *Maastricht Journal of European and Comparative Law* 812; Tobias Lock, *The European Court of Justice and International Courts* (Oxford University Press 2015); Laurent Scheeck, 'The Relationship between the European Courts and Integration through Human Rights' (2005) 65 *Heidelberg Journal of International Law* (ZaöRV) 837.

2 In *Bosphorus* (see *Bosphorus Hava Yolları Turizm ve Ticaret Anonim* Şirketi *v Ireland* App no 45036/98 (ECtHR, 30 June 2005)), the ECtHR accepted that state action taken in compliance with "international legal obligations" is justified as long as the "relevant organization" protects fundamental rights "in a manner which can be considered at least equivalent to that for which the Convention provides" (para 155). Should such equivalent protection be considered to be provided by the EU, the presumption should then be that an EU Member State does not depart from the requirements of the ECHR when it does no more than implementing its EU membership obligations (para 156). The presumption can be rebutted, if in the circumstances of a particular case, the protection of Convention rights is considered to be "manifestly deficient" (para. 156).

3 Bruno de Witte, 'The Use of the ECHR and Convention Case Law by the European Court of Justice', in Patricia Popelier, Catherine Van de Heyning and Piet Van Nuffel (eds), *Human Rights Protection in the European Legal Order: The Interaction Between the European and the National Courts* (Intersentia 2011) 17, at 20.

4 Case C-260/89 *ERT* [1991] ECLI:EU:C:1991:254, para 41.

5 Opinion 2/13 [2014] ECLI:EU:C:2014:2454, para 179.

6 Ibid, para 180.

*also* be determined by the case law of the ECtHR.[7] The non-regression clause of Article 53 CFR further proclaims that the CFR shall not "be interpreted as restricting or adversely affecting human rights and fundamental freedoms as recognized … by international agreements to which the Union or all the Member States are party", including the ECHR.

**5** In light of the above, the rulings of the ECtHR enjoy authority in EU law and indeed, up until 2009 when the CFR took effect, it was customary for the CJEU to defer to the ECHR and the jurisprudence of the ECtHR in fundamental rights cases. As was noted, no other body of "foreign" case law was cited on such a frequent basis by the CJEU.[8] Post-Lisbon, the incidence of human rights adjudication before the CJEU has significantly increased. The coming into force of the CFR, the EU's own binding list of fundamental rights, has encouraged CFR-centrism on behalf of the CJEU.[9] However, this has not eliminated CJEU references to ECtHR case law. By mandating reliance on the ECHR for the interpretation of CFR rights that correspond to the ECHR, Article 52(3) CFR has allowed citations of ECtHR case law to persist. In fact, Opinion 2/13,[10] which thwarted EU accession to the ECHR on the terms specified in the Draft Accession Agreement,[11] has not hindered the ability of the CJEU and the ECtHR to determine the volume and breadth of their jurisprudential interaction. In cases concerning digital technologies and digitalization, the CJEU may have actually good reasons to look for insight into the jurisprudence of the ECtHR. The pace of technology's evolution creates numerous hurdles for judges with particularly complex questions of both facts and law permeating judicial decision-making. Judicial dialogue can help address the novelty of the factual and legal context and also bring broader benefits to the fore, in particular adjudicative coherence, which is imperative in fundamental rights disputes.[12]

**6** CJEU case law addressing various aspects of digital innovation has blossomed over the past years. There is indeed a broad array of rulings where the CJEU has been confronted with legal issues arising from digital transition. Relevant cases range from cases in the fields of intellectual property and taxation of digital business to cases regarding the responsibilities of digital intermediaries, consumer protection in the digital marketplace, cybersecurity and data retention to name a few. Here the analysis builds, without purporting to be exhaustive, on cases focused on digital communication, expression and creativity in the digital ecosystem. This article focuses on CJEU cases that attest to the various ways in which digital innovation and technologies have influenced the ways in which content and information is produced, distributed and accessed and therefore how we think about and conceptualize freedom of expression, freedom of information, freedom of the arts and other rights and freedoms that may be relevant in this context. It concentrates therefore on those fundamental rights which enhance the autonomy to communicate and to seek, receive and impart information using digital innovation, rather than those rights which are put at risk by the ways in which use of these innovative technologies is generally made. It is structured as follows. Part B explores the input of ECtHR case law in copyright cases with a digital dimension, focusing on cases concerning digital publishing and creative expression with digital tools. Parts C and D respectively discuss judicial interaction with the ECtHR in cases concerning online publication requirements set forth in EU or Member States' legislation and cases that ponder questions concerning privacy, data protection and conflicts with freedom of expression in the digital environment. Part E examines use of ECtHR rulings in case law concerned with the interception of online communications. The cases explored testify to the variety of legal issues raised and also demonstrate the distinct ways in which ECtHR case law is employed by the CJEU, reflecting the manifold effects of ECtHR jurisprudence on CJEU assessment.

7 See Explanations relating to the Charter of Fundamental Rights [2007] OJ C303/17. Pursuant to Article 52(7) CFR, the Explanations "shall be given due regard by the courts of the Union and of the Member States".

8 See Douglas-Scott (2006) (n 1) 650; Glas and Krommendijk (n 1) 569; Harpaz (n 1) 109; and de Witte (n 3) 25.

9 See de Búrca (n 1) 174-175.

10 On Opinion 2/13, see, amongst others, Leonard F.M. Besselink, Monica Claes and Jan-Herman Reestman, 'A Constitutional Moment: Acceding to the ECHR (Or Not)' (2015) 11(1) *European Constitutional Law Review* 2; Bruno de Witte and Šejla Imamović, 'Opinion 2/13 on Accession to the ECHR: Defending the EU Legal Order Against a Foreign Human Rights Court' (2015) 40(5) *European Law Review* 683; Tobias Lock, 'The Future of the European Union's Accession to the European Convention on Human Rights After Opinion 2/13: Is It Still Possible and Is It Still Desirable? (2015) 11(2) *European Constitutional Law Review* 239.

11 See Fifth Negotiation Meeting Between the CDDH Ad Hoc Negotiation Group and the European Commission on the Accession of the European Union to the European Convention on Human Rights, Final Report to the CDDH, Strasbourg 10 June 2013, <www.coe.int/t/dlapil/cahdi/Source/Docs2013/47_1_2013_008rev2_EN.pdf>, accessed 22 December 2021.

12 On the benefits of judicial dialogue and interaction, see de Búrca (n 1) and Amrei Müller and Hege Elisabeth Kjos, 'Introduction', in Amrei Müller (ed, in collaboration with Hege Elisabeth Kjos), *Judicial Dialogue and Human Rights* (Cambridge University Press 2017) 1.

## B. CJEU Copyright-Related Case Law with A Digital Dimension

**7** Cases like *Funke Medien*, *Spiegel Online* and *Pelham and others*, which have dealt with the interpretation of *Directive 2001/29/EC* (the Copyright Directive),[13] have created ample room for the incorporation of ECtHR interpretative standards in the reasoning of the CJEU.[14] The preliminary questions raised with the CJEU in these three cases underlined the tension that exists between copyright as a fundamental (intellectual property) right, protected under Article 17(2) CFR, and other fundamental rights, in particular freedom of expression, which enjoys protection under Article 11 CFR.[15] Domestic courts have sought guidance on the adequacy of the EU copyright legislation to address this tension fully, cognizant of the fact that the Copyright Directive seeks *itself* to achieve a *fair balance* of rights and interests by combining the recognition of exclusive rights for rightholders (i.e. authors, performers and other members of the creative community) with an exhaustive set of copyright exceptions or limitations (all optional save one[16]) to the benefit of the users of protected content. Whereas the exclusive rights laid down for authors and other members of the creative community reflect their interest in the protection of their fundamental right to intellectual property, the exceptions and limitations foreseen in the Copyright Directive reflect the interests of users in the protection of their fundamental rights, covering protection of freedom of expression. When interpreting relevant rules, the CJEU has purposefully built on ECtHR case law to construe EU copyright law in compliance with free speech safeguards.

**8** *Funke Medien* was about the unauthorized online publication of military reports of the German government containing information on the deployment of federal armed forces abroad. The leaked documents had been published by a daily newspaper in an unedited form and with no commentary. The German government sought an injunction claiming that the newspaper had infringed its copyright over the reports. *Spiegel Online* revolved around a controversial book publication on sexual offences committed against minors. The author, a German politician, had sought to prove, when he was a candidate in parliamentary elections, that the meaning of his book had been altered. He had therefore published the manuscript and the contested text on his website, accompanying the latter with a statement on each page dissociating himself from relevant content. An Internet news outlet, Spiegel Online, had yet published an article contending that there had been no alteration and had made available, by means of hyperlinks, the manuscript and the publisher's version of it, without the latter bearing the politician's message of dissociation. The publication was challenged as an infringement of the politician's copyright.

**9** In both cases, the CJEU was asked to clarify whether freedom of expression, enshrined in Article 11 CFR, could justify an exception to copyright, beyond the exhaustive list of exceptions and limitations, formulated in Article 5 of the Copyright Directive. Although some of these exceptions, such as the exception for reporting of current events[17] and the exception for "quotations for purposes such as criticism or review",[18] had a free speech dimension, the referring judges had doubts about their applicability. The CJEU rejected the idea of an independent copyright exception on free speech grounds but acknowledged the importance of freedom of expression for the interpretation and application of the Copyright Directive.[19] A

13 Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society [2001] OJ L 167/10.

14 Case C-469/17 *Funke Medien NRW* [2019] ECLI:EU:C:2019:623, Case C-516/17 *Spiegel Online* [2019] ECLI:EU:C:2019:625 and Case C-476/17 *Pelham and others* [2019] ECLI:EU:C:2019:624.

15 On the relationship between copyright and fundamental rights, including freedom of expression, see Elena Izyumenko, 'The Freedom of Expression Contours of Copyright in the Digital Era: A European Perspective' (2016) 19(3-4) *The Journal of World Intellectual Property* 115; Bernd Justin Jütte, 'The Beginning of a (Happy?) Relationship: Copyright and Freedom of Expression in Europe' (2016) 38(1) *European Intellectual Property Review* 11; Stijn van Deursen and Thom Snijders, 'The Court of Justice at the Crossroads: Clarifying the Role for Fundamental Rights in the EU Copyright Framework' (2018) 49 *International Review of Intellectual Property and Competition Law* 1080; Tuomas Mylly, 'The Constitutionalization of the European Legal Order: Impact of Human Rights on Intellectual Property in the EU', in Christophe Geiger (ed), *Research Handbook on Human Rights and Intellectual Property* (Edward Elgar 2015) 103; Tito Rendas, 'Fundamental Rights in EU Copyright Law: An Overview', in Eleonora Rosati (ed), *Routledge Handbook of EU Copyright Law* (Routledge 2021) 18.

16 On the implications of the discretion given to Member States in this regard, see Lucie Guibault, 'Why Cherry-Picking Never Leads to Harmonisation: The Case of the Limitations on Copyright under Directive 2001/29/EC' (2010) (1) *JIPITEC* 55.

17 See Article 5(3)(c) of the Copyright Directive (n 13).

18 Ibid., Article 5(3)(d).

19 For commentary see Sacha Garben, 'Fundamental Rights in EU Copyright Harmonization: Balancing Without a Solid

decisive role in this regard was attributed to the jurisprudence of the ECtHR and the framework the ECtHR has developed for balancing the right to intellectual property, protected under Article 1 of the First Protocol to the ECHR, and freedom of expression, safeguarded under Article 10 ECHR.

**10** In *Ashby Donald and Others v France*,[20] the ECtHR ruled that domestic courts enjoy a particularly wide margin of appreciation when dealing with copyright-related interferences with the exercise of free speech in the case of *commercial* speech.[21] The case had stemmed from the conviction of the applicants for copyright infringement, following the online publication of fashion show photographs they had taken without permission, with the aim of selling them or charging a fee for their viewing. The ECtHR held that there had been an interference with the applicants' free speech, that the interference pursued the legitimate aim of protecting the intellectual property rights of the fashion designers concerned and that the interference was prescribed by law. However, the ECtHR found no violation of Article 10 ECHR, considering the interference to be "necessary in a democratic society". The ECtHR stated in particular that domestic judicial authorities had not overstepped their margin of appreciation in privileging respect for the right to intellectual property. Not only did the right to intellectual property enjoy protection under the ECHR (alongside freedom of expression);[22] also, the nature of the speech at issue should be taken into account.[23] As its purpose was commercial, it was not entitled to the same level of protection afforded to political expression and debate in the public interest.[24] The latter traditionally enjoys wide protection under the ECHR.

**11** In *Ashby Donald and Others v France*, the ECtHR shed light on the intersection between copyright and freedom of expression. Copyright protection (i.e. the applicants' conviction for breach of copyright) was conceptualized as a restriction to the exercise of freedom of expression, coming within the scope of Article 10(2) ECHR concerning legitimate restrictions of free speech,[25] including restrictions for the purposes of protecting the "rights of others"; here, the right to intellectual property. The ECtHR observed that a balancing test was required between the right to intellectual property and freedom of expression.[26] It declared that domestic authorities enjoyed an important margin of appreciation when required to strike a balance between competing ECHR rights.[27] In the case at hand, as the publication of the photographs had been motivated by profit, domestic authorities had a *particularly wide* margin of appreciation.[28]

**12** The type of speech at issue was thus of significance to the breadth of national courts' margin of appreciation for balancing the right to intellectual property and freedom of expression. It was this element that the CJEU integrated in *Funke Medien* and *Spiegel Online*.[29] In light of Article 52(3) CFR, the CJEU first observed that Article 11 CFR contains rights which correspond to those guaranteed by Article 10(1) ECHR.[30] Assuming in *Funke Medien* that the military documents at hand could be classified as copyright-protected works,[31] the CJEU noted that they had been published on the newspaper's website in a structured form with an introductory note, links

Framework: *Funke Medien, Pelham, Spiegel Online*' (2020) 57(6) *Common Market Law Review* 1909; Christophe Geiger and Elena Izyumenko, 'The Constitutionalization of Intellectual Property Law in the EU and the Funke Medien, Pelham and Spiegel Online Decisions of the CJEU: Progress, But Still Some Way to Go!' (2019) Center for International Intellectual Property Studies Research Paper No 2019-09; Caterina Sganga, 'A Decade of Fair Balance Doctrine, and How to Fix It: Copyright Versus Fundamental Rights Before the CJEU from Promusicae to Funke Medien, Pelham and Spiegel Online' (2019) 41(11) *European Intellectual Property Review* 683; Thon Snijders and Stijn van Deursen, 'The Road Not Taken – The CJEU Sheds Light on the Role of Fundamental Rights in the European Copyright Framework – A Case Note on the Pelham, Spiegel Online and Funke Medien Decisions' (2019) 50(9) *International Review of Intellectual Property and Competition Law* 1176.

20 *Ashby Donald and Others v France* App no 36769/08 (ECtHR, 10 January 2013).

21 See Christophe Geiger and Elena Izyumenko, 'Copyright on the Human Rights' Trial: Redefining the Boundaries of Exclusivity Through Freedom of Expression' (2014) 45(3) *International Review of Intellectual Property and Competition Law* 316; Jütte (n 15).

22 *Ashby Donald and Others* (n 20) paras 40-41.

23 Ibid, paras 39 and 41.

24 On this, see *Mouvement raëlien suisse v Switzerland* App no 16354/06 (ECtHR, 13 July 2012) para 61.

25 *Ashby Donald and Others* (n 20) para 36.

26 Ibid, para 40.

27 Ibid.

28 Ibid, paras 39 and 41.

29 See *Funke Medien* (n 14) para 74 and *Spiegel Online* (n 14) para 58.

30 *Funke Medien* (n 14) para 73 and *Spiegel Online* (n 14) para 57.

31 *Funke Medien* (n 14) para 75.

and a space for comments.[32] Such a publication - arguably a contribution in the public interest - could "amount to 'use of works ... in connection with ... reporting'" and could therefore fall within the exception of the Copyright Directive for reporting of current events, "provided that the other conditions set out in th[e relevant] provision were satisfied" - an issue for the national court to verify.[33] In *Spiegel Online*, the CJEU did not explicitly pronounce on the effects of the use made of the "nature of speech" criterion.[34] It implied however that Spiegel Online had similarly contributed to a debate in the public interest by publishing documents that ultimately dealt with the credibility of a political figure. For the CJEU, what was essential in both cases was that national courts, when they apply the Copyright Directive (and its news reporting exception), rely on an interpretation that fully adheres to the free speech prerogatives of the CFR.[35]

**13** Such a freedom of expression-oriented approach to the interpretation of the Copyright Directive was also followed in *Pelham and others*. Here, the point of contention was the practice of music sampling, i.e. the use of an extract from a protected phonogram in a derivative work, usually by means of digital technology,[36] and whether or not it comes within the scope of the right of reproduction pursuant to Article 2(c) of the Copyright Directive.[37] The latter requires Member States to provide for an exclusive right of phonogram producers "to authorise or prohibit direct or indirect, temporary or permanent reproduction by any means and in any form, in whole or in part" of their phonograms.[38] The CJEU held that any reproduction of a sound sample, even if short, should in principle be regarded as reproduction "in part" of a phonogram and therefore as falling within the right of reproduction of phonogram producers.[39] Use of ECtHR case law on freedom of the arts enabled the CJEU to exclude the use of a sound sample that "becomes unrecognizable" in the new work from the right of reproduction.

**14** Unlike the CFR which protects freedom of the arts under Article 13, the ECHR does not provide for freedom of the arts as an autonomous right. Notwithstanding, the ECtHR has recognized in several instances the artistic dimension of freedom of expression. Considering the technique of music sampling to constitute "a form of artistic expression which is covered by freedom of the arts",[40] the CJEU drew on ECtHR case law to exemplify the point that freedom of the arts, emanating from freedom of expression, has a bearing on the interpretation of the right of reproduction. Relying on ECtHR case law such as *Müller and Others v Switzerland* and *Karatas v Turkey*,[41] the CJEU affirmed that freedom of the arts, "in so far as it falls within the scope of freedom of expression ... affords the opportunity to take part in the public exchange of cultural, political and social information and ideas of all kinds".[42] When exercising freedom of the arts through sampling, users could modify the original sound sample to such an extent, resulting in the sample becoming unidentifiable in the new work. In such instances, sampling should not be construed as "reproduction". According to the CJEU, "to regard [such] a sample ... as constituting 'reproduction'... would ... fail to meet the requirement of [the Directive's] fair balance"[43] between the interest of phonogram producers in the protection of their right to intellectual property and users' right to artistic speech, protected under Article 11 CFR on freedom of expression and Article 13 CFR as *lex specialis*.

**15** Use of ECtHR case law on freedom of artistic expression hence contributed in *Pelham and others* to the delimitation of the scope of the exclusive right of reproduction. Crucially, the distinction between sampling where the original sample remains recognizable in the derivative work and comes within the scope of the right of reproduction and sampling where the original sample becomes unidentifiable and does not come within the scope of the right of reproduction did not originate in the Copyright Di-

32 Ibid.

33 Ibid.

34 *Spiegel Online* (n 14) para 58.

35 *Funke Medien* (n 14) para 76 and *Spiegel Online* (n 14) para 59.

36 On this see Tracy Reilly, 'Good Fences Make Good Neighboring Rights: The German Federal Supreme Court Rules on the Digital Sampling of Sound Recordings in Metall auf Metall' (2012) 13(1) *Minnesota Journal of Law, Science and Technology* 153.

37 For commentary see Bernd Justin Jütte and João Pedro Quintais, 'The *Pelham* Chronicles: Sampling, Copyright and Fundamental Rights' (2021) 16(3) *Journal of Intellectual Property Law & Practice* 213.

38 See Article 2(c) of the Copyright Directive (n 13).

39 *Pelham and others* (n 14) para 29.

40 Ibid, para 35.

41 *Müller and Others v Switzerland* App no 10737/84 (ECtHR, 24 May 1988) and *Karatas v Turkey* App no 23168/94 (ECtHR, 8 July 1999).

42 *Pelham and others* (n 14) para 34.

43 Ibid, para 37.

rective. This was a distinction drawn by the CJEU itself in light of free speech concerns and relevant ECtHR case law. Seen in this light, ECtHR jurisprudence enabled the CJEU in this case to develop *new* concepts, shaping the scope and meaning of the right of reproduction beyond the standards set forth in the Copyright Directive.[44]

## C. CJEU Case Law On Online Publication Requirements

**16** The Internet differs as an information tool from other media. Its accessibility and capacity to store and communicate information to a wide audience magnifies the impact of content published online.[45] Thus, whilst the ECtHR has acknowledged that "the Internet plays an important role in enhancing the public's access to news and facilitating the dissemination of information",[46] in support of freedom of expression and information, it has also recognized that "the risk of harm posed by content and communications on the Internet to the exercise and enjoyment of human rights and freedoms ... is certainly higher than that posed [for instance] by the press".[47] Seen in this light, disputes before the CJEU that focus on online publication requirements are related to digital change, its implications for free speech and the challenges it brings for the exercise of rights such as the right to privacy or the right to protection of personal data. They therefore form part of the analysis.

**17** *Schecke* derived from domestic proceedings, initiated by an agricultural undertaking and a farmer, challenging the online publication, by domestic authorities, of data relating to them as recipients of funds from the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD).[48] The referring court considered the publication obligation set forth in EU legislation[49] to be an unjustified interference with the right to protection of personal data, coming within the scope of Article 8 ECHR on the right to respect for private life.[50] It stayed proceedings and submitted a set of questions to the CJEU concerning, amongst other issues, the validity of the agricultural subsidies publication scheme. Reliance on ECtHR jurisprudence by the CJEU contributed to the partial invalidation of the relevant EU rules.[51]

**18** The referring court framed its questions on the basis of the ECHR but the CJEU clarified from the outset that assessment would take place on the basis of the CFR,[52] emphasizing the "close connection" of the right to protection of personal data, enshrined in Article 8 CFR, with the right to respect of private life, protected by Article 7 CFR.[53] This straightforward "switch" from the ECHR to the CFR[54] did not preclude use of ECtHR case law on Article 8 ECHR. Taking note of the general limitations clause of Article 52(1) CFR, together with Articles 52(3) and 53 CFR,[55] the CJEU sought, through resort to ECtHR case law, to give meaning to what it called "the right to respect for private life with regard to the processing of personal

44 On the development of new concepts for copyright through fundamental rights analysis, see Evangelia Psychogiopoulou, 'Copyright and Freedom of Expression in the Digital Age: Unravelling the Complexities of Fundamental Rights Analysis by the Court of Justice', in Evangelia Psychogiopoulou and Susana de la Sierra (eds), *Digital Media Governance and Supranational Courts: Selected Issues and Insights from the European Judiciary* (Edward Elgar Publishing 2022, forthcoming) 91.

45 See Wolfgang Benedek and Matthias C. Kettemann, *Freedom of Expression and the Internet*, https://rm.coe.int/prems-167417-gbr-1201-freedom-of-expression-on-internet-web-16x24/1680984eae, 25, accessed 22 December 2021.

46 *Times Newspapers Ltd v the United Kingdom (nos. 1 and 2)* App nos 3002/03 and 23676/03 (ECtHR, 10 March 2009), para 27.

47 *Editorial Board of Pravoye Delo and Shtekel v Ukraine* App no 33014/05 (ECtHR, 5 May 2011), para 63. See also Wegrzynowski and Smolczewski v Poland App no 33846/07 (ECtHR, 16 July 2013), para 58.

48 Joined Cases C-92/09 and C-93/09 *Volker und Markus Schecke GbR and Hartmut Eifert v Land Hessen* [2010] ECLI:EU:C:2010:662.

49 Namely Articles 42(8b) and 44a of Council Regulation (EC) No 1290/2005 of 21 June 2005 on the financing of the common agricultural policy [2005] OJ L209/1, as amended by Council Regulation (EC) No 1437/2007 of 26 November 2007 [2007] OJ L322/1, and Commission Regulation (EC) No 259/2008 of 18 March 2008 laying down detailed rules for the application of Council Regulation (EC) No 1290/2005 as regards the publication of information on the beneficiaries of funds deriving from the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD) [2008] OJ L76/28.

50 *Schecke* (n 48) para 44.

51 For commentary see Michal Bobek, 'Joined Cases C-92/09 & C-93/09, Volker und Markus Schecke GbR and Hartmut Eifert, Judgment of the Court of Justice (Grand Chamber) of 9 November 2010' (2011) 48(6) *Common Market Law Review* 2005.

52 *Schecke* (n 48) para 46.

53 Ibid, para 47.

54 See Bobek (n 51) 2020.

55 *Schecke* (n 48) paras 50-51.

data", deriving from Article 7 CFR, construed in conjunction with Article 8 CFR.[56] The CJEU noted that such a right concerned "any information relating to an identified or identifiable individual",[57] with express reference to *Amann v Switzerland* and *Rotaru v Romania*, where the ECtHR had ruled that the concept of private life should be interpreted broadly.[58]

**19** Echoing the CFR/ECHR consistency requirements pervading Article 52(3) CFR, the CJEU stressed that any limitations that could be lawfully imposed under the CFR "corresponded" to those tolerated by the ECHR.[59] Adopting clear ECHR language, the CJEU held that the legal requirements for the *ex post* publication of the names of the aid beneficiaries, together with the amounts granted and other data, constituted an *interference* with their private life within the meaning of Article 7 CFR.[60] The fact that the published data concerned activities of a professional nature was irrelevant. As the ECtHR had ruled that the concept of "private life" comprises activities of a professional or business nature,[61] the CJEU interpreted "private life" widely, stating that it encompasses information related to the funds received by the aid beneficiaries in their business capacity.[62]

**20** Turning to the justification of the interference at issue, the CJEU structured its assessment with reference to Article 52(1) CFR: the interference should be "provided by law", it should meet an EU objective of general interest and it should be proportionate to the legitimate aim pursued. Particularly as regards the test of proportionality, the CJEU pointed to relevant ECtHR case law,[63] ascertaining that a two-stage assessment was required: the measure reviewed should be appropriate for attaining the objective pursued and it should not go beyond what was necessary to achieve it.[64] Concerning the second facet, the CJEU found that the EU legislator had not properly balanced the interests at stake: consideration could have been given to publication requirements that could effectively contribute to increased transparency in public spending whilst causing less interference with the rights of natural persons benefitting from EU aid under the CFR.[65] Regarding the publication of data relating to legal persons, however, and provided that legal persons could claim protection under Articles 7 and 8 CFR by identifying natural persons in their title,[66] the CJEU concluded that a fair balance had been struck.[67] The CJEU's reasoning built directly on ECtHR case law. Pursuant to the latter, any *positive obligations* deriving from the ECHR for state authorities should not entail an impossible or disproportionate burden imposed upon them.[68] For the CJEU, any steps taken to introduce publication requirements affecting less adversely the rights of legal persons should accordingly not result in an "unreasonable administrative burden": that would have been the case if domestic authorities had been required to examine, before publication, for each legal person, whether its title identifies any natural persons.[69]

**21** *Schecke* shows multifarious use of ECtHR case law. The jurisprudence of the ECtHR was used to elucidate the concept of private life, which proved key to defining the scope of relevant rights safeguarded under Articles 7 and 8 CFR and "interference" with their exercise. ECtHR rulings also informed the CJEU's proportionality test and filled the gaps when no authority sprang from the CJEU on *positive obligations* under the CFR via use of the ECtHR's jurisprudence on *positive obligations* under the ECHR. In *Commission v Hungary*,[70] which should be seen in the context of the CJEU's efforts to uphold the rule of law and democracy in the EU, Hungary was found to have breached its obligations under the CFR (and the TFEU on free movement of capital) by requiring civil society organizations receiving financial support from abroad to disclose relevant information online, in addition to imposing specific registration and declaration obligations upon them, with accompanying penalties, including dissolution. Employing CFR language this time, the CJEU built on ECtHR case law to clarify the

56 Ibid, para 52.

57 Ibid.

58 See *Amann v Switzerland* App no 27798/95 (ECtHR, 16 February 2000), para 65 and *Rotaru v Romania* App no 28341/95 (ECtHR, 4 May 2000), para 43.

59 *Schecke* (n 48) para 52.

60 Ibid, para 58.

61 *Amann v Switzerland* (n 58) para 65 and *Rotaru v Romania* (n 58) para 43.

62 *Schecke* (n 48) para 59.

63 Ibid, para 72, mentioning *Gillow v United Kingdom* App no 9063/80 (ECtHR, 24 November 1986).

64 Ibid, para 74.

65 Ibid, para 88.

66 Ibid, para 53.

67 Ibid, para 87.

68 See *K.U. v Finland* App no 2872/02 (ECtHR, 2 March 2009) para 48.

69 *Schecke* (n 48) para 87.

70 Case C-78/18 *Commission v Hungary (Transparency of associations)* [2020] ECLI:EU:C:2020:476.

concept of *limitation* on the exercise of CFR rights, within the meaning of Article 52(1) CFR.

**22** With express mention of Article 52(3) CFR, the CJEU noted that the right to freedom of association, enshrined in Article 12(1) CFR, corresponds to the right to freedom of association under Article 11 ECHR;[71] and that similarly, the right to respect for private life under Article 7 CFR corresponds to the right to respect for private life under Article 8 ECHR.[72] According to ECtHR case law, the right to freedom of association should be seen as "one of the essential bases of a democratic and pluralist society, inasmuch as it allows citizens to act collectively in fields of mutual interest and in doing so to contribute to the proper functioning of public life".[73] It did not only encompass the ability to create or dissolve an association but also the ability to operate as an association without unjustified interference by the state.[74] Legislation that thus rendered significantly more difficult the operation of associations[75] amounted to an interference with the right to freedom of association.[76] Such legislation, according to the CJEU, should similarly be construed as a limitation of the right to freedom of association under Article 12 CFR.[77] Against this backdrop, the CJEU held that the publicity obligations put in place in Hungary were a limitation of freedom of association: in stigmatizing the associations and foundations concerned, they deterred the channeling of financial support from abroad and therefore hindered their operation.[78]

**23** Regarding the right to respect for private and family life, the CJEU referred to *Schecke* and ECtHR case law on Article 8 ECHR[79] to underline the point that whilst legal requirements for the disclosure of natural persons' data were an outright limitation of the right to privacy,[80] the publication of data relating to legal persons could amount to a limitation of the right to respect for private life, provided that the official title of the legal persons incorporated the name of natural persons.[81] Judicial assessment then addressed the argument advanced by the Hungarian authorities that donors should qualify as "public figures", entailing no limitation of the right to respect for private life under the CFR. According to ECtHR case law, Hungary submitted, public figures could not claim the same level of protection of their private life as private persons; the public's right to be informed (safeguarded under the right to freedom of expression) could extend to aspects of their private life.[82] However, the CJEU noted that relevant ECtHR case law suggested a strict interpretation of the concept of "public figures": it did not encompass persons who did not exercise a political role.[83] In *Von Hannover v Germany (No. 2)*, for instance, the ECtHR had ruled that a distinction should be drawn between reporting facts capable of contributing to a debate in a democratic society, relating to politicians in the exercise of their official functions, and reporting details of the private life of public figures who are well known to the public but do not exercise such functions.[84] According to the CJEU, the provision by natural and legal persons alike of financial support to civil society organizations should not be construed as exercising a political role.[85] The publication obligations set forth in the Hungarian legislation

71 Ibid, paras 110-111.

72 Ibid, para 122.

73 Ibid, para. 112, mentioning *Gorzelik and Others v Poland* App no 44158/98 (ECtHR, 17 February 2004) and *Tebieti Mühafize Cemiyyeti and Israfilov v Azerbaijan* App no 37083/03 (ECtHR, 8 October 2009).

74 Ibid, para 113, mentioning *Gorzelik and Others v Poland* (n 73), *Tebieti Mühafize Cemiyyeti and Israfilov v Azerbaijan* (n 73) and *Moscow Branch of the Salvation Army v Russia* App no 72881/01 (ECtHR, 5 October 2006).

75 For instance by imposing excessive registration requirements, by limiting the capacity of associations to receive financial resources, by rendering them subject to publicity requirements creating a negative image of them or by exposing them to the threat of penalties, in particular dissolution. See Ibid, para 114, mentioning *Republican Party of Russia v Russia* App no 12976/07 (ECtHR, 12 April 2011), *Parti nationaliste basque - Organisation régionale d'Iparralde v France* App no 71251/01 (ECtHR, 7 June 2007), *Grande Oriente d'Italia di Palazzo Giustiniani v Italy* App no 35972/97 (ECtHR, 2 August 2001) and *Moscow Branch of the Salvation Army v Russia* (n 74).

76 Ibid, para 114, mentioning *Grande Oriente d'Italia di Palazzo Giustiniani v Italy* (n 75).

77 Ibid.

78 Ibid, paras 115-116 and 118.

79 Ibid., para 123, with reference to *Von Hannover v Germany* App no 59320/00 (ECtHR, 24 June 2004) and *Tysiac v Poland* App no 5410/03 (ECtHR, 20 March 2007).

80 Ibid, para 124.

81 Ibid, para 125.

82 Ibid, para 129, mentioning *Von Hannover v Germany* (n 79) and *Von Hannover* v *Germany (No. 2)* App nos 40660/08; 60641/08 (ECtHR, 7 February 2012).

83 Ibid, para 130.

84 See *Von Hannover v Germany (No. 2)* (n 82) para 110. See also *Von Hannover v Germany* (n 79) paras 63-64.

85 *Commission v Hungary* (n 70) para 131.

were therefore a limitation of the right to respect for private life,[86] which as the CJEU further found, could not be justified under Article 52(1) CFR.

## D. CJEU Case Law On Conflicts Between Privacy, Data Protection and Free Speech

**24** Judicial dialogue and interaction can be particularly helpful when the balancing of distinct fundamental rights is at stake. ECtHR case law is well-developed on this aspect and addresses the reconciliation of ECHR rights from various perspectives and on the basis of a broad range of criteria. There is accordingly a large pool of ECtHR cases upon which the CJEU can usefully draw.

**25** In *Buivids*,[87] use of ECtHR case law was made to assist domestic courts when seeking to balance the right to respect for private life and freedom of expression. The case originated in proceedings concerning the online publication on YouTube of a video recording, taken by an individual in a Latvian police station when making a statement. The Latvian Data Protection Agency had found the amateur online publisher to have breached national legislation for failure to inform the identified police officers of the specific purpose of the processing of their personal data.[88] Contesting the agency's decision, the video publisher argued before domestic courts that the video sought to "bring to the attention of society" alleged police malpractice.[89] Relevant claims were rejected and appeal proceedings before the Latvian Supreme Court resulted in a preliminary reference to the CJEU concerning the interpretation of Directive 95/46/EC (the Data Protection Directive, now repealed).[90]

**26** The CJEU examined inter alia whether the video recording and publication at issue could be regarded as "processing of personal data for journalistic purposes". The Data Protection Directive required Member States to provide for exemptions or derogations from certain provisions of it "for the processing of personal data carried out solely for journalistic purposes", provided that such exemptions or derogations were "necessary to reconcile the right to privacy with the rules governing freedom of expression".[91] In light of past case law,[92] the CJEU ascertained that the journalistic derogation - now provided for in Article 85 of the General Data Protection Regulation (GDPR)[93] - applied to "every person engaged in journalism".[94] Journalism was not confined to an institutional media setting but encompassed all activities whose purpose was the disclosure to the public of information, opinions or ideas.[95] Despite such wide understanding of journalism, not all information published online should come under the concept of "journalistic activity".[96] In the case at hand, the journalistic derogation could be engaged, provided that the recording and publication of the disputed video were intended to disclose information, opinions or ideas to the public.[97] This was left to the referring court to determine.[98] Should the journalism definition be met, the journalistic derogation should apply only in so far as was *strictly necessary*.[99] To guide the domestic court in its assessment, the CJEU used ECtHR case law. Asserting, on the basis of Article 52(3) CFR, that Articles 7 and 11 CFR contain rights that correspond to those guaranteed by Articles 8 and 10 ECHR,[100] the CJEU pointed to a number of criteria established by the ECtHR for balancing the right to respect for private life and free speech.[101] These should receive proper attention by the national court and were the following: "contribution

86 Ibid, para 132.

87 Case C-345/17 *Buivids* [2019] ECLI:EU:C:2019:122.

88 Ibid, para 17.

89 Ibid, para 18.

90 Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data [1995] OJ L281/31.

91 Ibid, Article 9.

92 Case C-73/07 *Satakunnan Markkinapörssi and Satamedia* [2008] ECLI:EU:C:2008:727.

93 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC [2016] OJ L 119/1.

94 *Buivids* (n 87) paras 52 and 55.

95 Ibid, paras 51 and 53.

96 Ibid, para 58.

97 Ibid, para 62.

98 Ibid, para 59.

99 Ibid, para 68.

100 Ibid, para 65.

101 The CJEU referred in particular to *Satakunnan Markkinapörssi Oy and Satamedia Oy v Finland* App no 931/13 (ECtHR, 27 June 2017).

to a debate of public interest, the degree of notoriety of the person affected, the subject of the news report, the prior conduct of the person concerned, the content, form and consequences of the publication, and the manner and circumstances in which the information was obtained and its veracity".[102]

**27** In *GC and Others v CNIL*,[103] ECtHR case law was used to facilitate the balancing of the right to protection of personal data and the right to information, entrusted upon search engine operators when met with so-called "de-referencing" requests.[104] The request for a preliminary ruling focused on various aspects concerning the interpretation of the Data Protection Directive. It was lodged with the CJEU in the context of proceedings that challenged several decisions of the French Data Protection Authority, refusing to serve formal notice on Google to carry out de-referencing. Relevant de-referencing requests had been originally filed with, and denied by Google. They pertained to links in the list of search results obtained following name searches that led to content, mostly articles in the online press, containing "sensitive" personal data, within the meaning of Article 8(1) and (5) of the Data Protection Directive - now "special category" data under the GDPR.[105]

**28** The contribution of ECtHR case law to CJEU reasoning focused on the de-referencing of such special category data regarding legal proceedings against an individual.[106] In accordance with EU data protection legislation, the processing of such data is subject to special restrictions[107] and various conditions of lawfulness.[108] The CJEU held that even when relevant requirements are not met, EU data protection law allows exemptions to the general prohibition of processing such data for reasons of "substantial public interest".[109] Search engine operators should accordingly examine whether data processing is "necessary for exercising the freedom of information of internet users".[110] The CJEU noted in particular that according to the jurisprudence of the ECtHR, in cases based on claims about breach of Article 8 ECHR due to the online publication of 'old' media reports of criminal proceedings, a fair balance has to be struck between the applicants' right to respect for private life and the public's freedom of information.[111]

**29** Concerning the latter, in *M.L. and W.W. v Germany*, the ECtHR ruled that the public has both an interest in being informed about a topical event and in being able to conduct research into past events.[112] In this case, the applicants had alleged a violation of Article 8 ECHR due to the decision of the Federal Court of Justice not to prohibit various media outlets from making available on the Internet old reports concerning the applicants' trial and conviction for murder. The ECtHR had agreed with the refusal of the German court to issue an injunction forbidding different media organizations from allowing Internet users access to relevant reports, finding the public's interest in access to the "digital archives" of the press to be protected under Article 10 ECHR.[113] However, the ECtHR had also noted that the public's interest in access to information regarding criminal proceedings could vary in degree: it could evolve during the course of proceedings and also over time.[114]

**30** The CJEU fully agreed with this point. On its basis, it held that when met with a de-referencing request

102 *Buivids* (n 87) para 66.

103 Case C-136/17 *GC and Others v Commission nationale de l'informatique et des libertés (CNIL)* [2019] ECLI:EU:C:2019:773.

104 For commentary, see Silvia de Conca, 'GC et al v CNIL: Balancing the Right to Be Forgotten with the Freedom of Information, the Duties of a Search Engine Operator (C-136/17 GC et al v CNIL)' (2019) 5(4) *European Data Protection Law Review* 561; and Jure Globocnik, 'The Right to Be Forgotten is Taking Shape: CJEU Judgments in GC and Others (C-136/17) and Google v CNIL (C-507/17)' (2020) 69(4) *GRUR International* 380.

105 See Articles 9 and 10 of Regulation (EU) 2016/679 (n 93).

106 The search results at issue linked inter alia to an article concerning a judicial investigation against one of the applicants and reports on a criminal hearing during which another applicant had been found guilty of sexual assaults on children. See *GC and Others* (n 103) paras 27-28.

107 Ibid, para 73, with reference to Article 8(5) of Directive 95/46/EC (n 90) and Article 10 of the GDPR (n 93).

108 Ibid, para 74, with reference in particular to Article 6(1)(c) to (e) of Directive 95/46/EC (n 90) and Article 5(1)(c) to (e) of the GDPR (n 93).

109 See Article 8(4) of Directive 95/46/EC (n 90) and Article 9(2)(g) of the GDPR (n 93).

110 *GC and Others* (n 103) para 75.

111 Ibid, para 76.

112 Ibid, mentioning *M.L. and W.W. v Germany* App nos 60798/10 and 65599/10 (ECtHR, 28 June 2018).

113 *M.L. and W.W. v Germany* (n 112) para 102.

114 Ibid. The ECtHR noted for instance that persons who had been convicted and whose release from prison approached had an interest in no longer being confronted with their acts in order to reintegrate in society. This would also be the case once a convicted person was finally released.

relating to links to special category data concerning an earlier stage of proceedings that "no longer correspond[s] to the current situation", search engine operators should assess whether the data subject has "a right to the information in question no longer [...] being linked with his or her name".[115] The CJEU clarified that the assessment carried out by the search engine operators should pay careful attention to the circumstances of the case, in particular "the nature and seriousness of the offence in question, the progress and the outcome of the proceedings, the time elapsed, the part played by the data subject in public life and his past conduct, the public's interest at the time of the [de-referencing] request, the content and form of the publication and the consequences of publication for the data subject".[116] Importantly, all these elements were criteria that had been assessed by the ECtHR when deciding *M.L. and W.W. v Germany*.[117]

**31** Interestingly, the CJEU's reasoning did not end here. The CJEU chose to go one step further: should a search engine operator find that the public's right to information outweighs the right to privacy and the protection of personal data, the operator should "at the latest on the occasion of the request for de-referencing ... adjust the list of results in such a way that the overall picture it gives the internet user reflects the current legal position".[118] When refusing a de-referencing request, search engine operators should thus ensure that the list of results displayed offers Internet users the "current" state of legal affairs: links to third-party websites publishing information on the "current" legal situation should take precedence, appearing "in first place on the list".[119]

**32** Judicial interaction with ECtHR case law may have offered inspiration here. The ECtHR accepted in *M.L. and W.W. v Germany* that it is primarily because of search engines that the information published by a media outlet can easily be found by Internet users.[120] The ECtHR also held that search engines amplify the scope of interference with the right to privacy resulting from a media outlet's decision to publish and maintain personal information online.[121] Because of this amplifying effect, the obligations of search engines towards the individual who was the subject of the published information could differ from those of media publishers.[122] The ECtHR yet also observed that the applicants had not informed of "any attempts to contact search-engine operators with a view to making the information concerning them less easy to find".[123] This may have induced the CJEU to acquiesce with requirements for making "old" publications that do not reflect the "current" situation "less easy" to find.

## E. CJEU Case Law on the Interception of Online Communications

**33** Reliance on ECtHR case law has also been visible in *WebMindLicenses*,[124] a case concerning alleged tax evasion through the conclusion of a licensing agreement for the operation of a website for the supply of interactive audiovisual services. The licensing agreement had been entered into with a company established in Portugal applying a lower standard value added tax (VAT) rate than that of Hungary where the company granting the licence was established. The request for a preliminary ruling arose in domestic administrative proceedings challenging the decision of the Hungarian tax authority that had found the licensing agreement to have circumvented national tax legislation. The commercial company that disputed the decision argued, amongst other issues, that the tax authority had used evidence obtained against it by means of intercepting telecommunications and seizing emails in the course of a parallel criminal procedure. The CJEU was asked therefore to clarify whether EU law prevented national tax authorities from using evidence obtained by such means.

**34** The CJEU examined inter alia the implications of fundamental rights on the collection and use of the disputed evidence. Concerning the collection of evidence, the CJEU recalled that in accordance with Article 52(3) CFR, Article 7 CFR should be given the same meaning and scope as Article 8(1) ECHR.[125] In particular, the finding of an interference with Article 8(1) ECHR should also be seen as a *limitation*, within the meaning of Article 52(1) CFR, of the right to respect for private life, enshrined in Article 7 CFR.[126]

115 *GC and Others* (n 103) para 77.

116 Ibid.

117 See *M.L. and W.W. v Germany* (n 112) paras 98-115.

118 *GC and Others* (n 103) para 78.

119 Ibid.

120 *M.L. and W.W. v Germany* (n 112) para 97.

121 Ibid.

122 Ibid.

123 Ibid, at para 114.

124 Case C-419/14 *WebMindLicenses* [2015] ECLI:EU:C:2015:832.

125 Ibid, para 70.

126 Ibid, para 71.

In several rulings,[127] the ECtHR had ruled that the interception of telecommunications interfered with the exercise of the right to respect for private life under Article 8 ECHR.[128] The ECtHR had also reached the same conclusion concerning the seizure of emails in the course of searches at the professional or business premises of natural persons and at the premises of companies.[129] Drawing on relevant case law, the CJEU declared that the interception of telecommunications and the seizure of emails at issue amounted to a limitation of the right to respect for private life under Article 7 CFR.

**35** Taking into account that the seizure of emails had occurred without judicial authorization, the CJEU referred to ECtHR case law where a number of safeguards had been identified against arbitrary interference,[130] with a view to facilitating the assessment of the necessity of the investigative measures by the referring court. The CJEU emphasized in particular requirements for a strict legal framework, limits on the powers of the state to order and effect searches without a judicial warrant, and adequate and effective safeguards against abuse both in law and in practice.[131] It also invited the referring court to verify whether the absence of prior judicial authorization could be remedied by an effective *ex post factum* judicial review relating to both the legality and the necessity of the seizure.[132] This was because in *Smirnov v Russia*, the ECtHR had ruled that such judicial review could act as a counterweight to the absence of a prior judicial warrant, provided that its efficiency was also proved.[133]

**36** Concerning the use of the evidence obtained, the CJEU similarly held that it constituted a limitation on the exercise of the right to respect for private life; it had therefore to comply with the prescriptions of Article 52(1) CFR.[134] Particularly, as regards the legality criterion, the CJEU observed that according to ECtHR case law,[135] compliance implied that the legal basis enabling use of the evidence gathered should be sufficiently clear and precise, affording protection against arbitrary interference.[136] In *Malone v the United Kingdom*, the ECtHR had ruled that the legality condition did not merely refer to the existence of a legal basis enabling interference; it also related to the quality of the law and the existence of legal protection against arbitrary interference.[137] These were all crucial elements for the assessment, by the referring court, of the limitation in question. According to the CJEU, should the evidence be found to have been obtained or used in breach of Article 7 CFR, it should be disregarded.[138]

## F. Conclusion

**37** Judicial dialogue has many facets: it extends from case law references and citations to judicial conferences and judicial networks connecting judges. The preceding analysis focused on judicial interaction by means of CJEU references to ECtHR case law. Admittedly, references to the rulings of peers do not all carry equal weight. Judges may only make a passing reference to the jurisprudence of others, sim-

127 See *Klass and Others v Germany* App no 5029/71 (ECtHR, 6 September 1978), para 41, *Malone v the United Kingdom* App no 8691/79 (ECtHR, 2 August 1984), para 64, *Kruslin v France* App no 11801/85 (ECtHR, 24 April 1990), para 26, *Huvig v France* App no 11105/84 (ECtHR, 24 April 1990), para 25 and *Weber and Saravia v Germany* App no 254934/00 (ECtHR, 9 June 2006), para 79.

128 *WebMindLicenses* (n 124) para 71.

129 Ibid, para 72, mentioning *Niemietz v Germany* App no 13710/88 (ECtHR, 16 December 1992), *Société Colas Est and Others v France* App no 37971/97 (ECtHR, 16 April 2002) and *Vinci Construction and GTM Génie Civil et Services v France* App nos 63629/10 and 60567/10 (ECtHR, 2 April 2015) .

130 Ibid, para 77.

131 Ibid, mentioning *Camenzind v Switzerland* App no 21353/93 (ECtHR, 16 December 1997), *Funke v France* App no 10828/84 (ECtHR, 25 February 1993), *Miailhe v France (no. 1)* App no 12661/87 (ECtHR, 25 February 1993) and *Société Colas Est and Others v France* (n 129).

132 *WebMindLicenses* (n 124) para 78, mentioning *Smirnov v Russia* App no 71362/01 (ECtHR, 7 June 2007).

133 *Smirnov v Russia* (n 132) para 45.

134 *WebMindLicenses* (n 124) para 80.

135 See in particular *Malone v the United Kingdom* (n 127) para 67 and *Gillan and Quinton v the United Kingdom* App no 4158/05 (ECtHR, 12 January 2010), para 77.

136 *WebMindLicenses* (n 124) para 81.

137 *Malone v the United Kingdom* (n 127) para 67.

138 *WebMindLicenses* (n 124) para 91. The CJEU also held that in accordance with the general EU law principle of observance of the rights of defence and Article 47 CFR on the right to an effective judicial remedy, the evidence should similarly be disregarded if the tax person was not given the opportunity, in the context of the administrative procedure, to access the evidence and be heard concerning it (paras 84-85 and 91); and if the national court was not empowered to verify whether the evidence had been collected and used in breach of the rights guaranteed by EU law, especially, the CFR (paras 87-89 and 91).

ply refer to it as part of the legal context of a case or substantively rely upon it. The jurisprudence of the CJEU dealing with new technologies and digitalization shows that engagement with ECtHR case law is not "cosmetic". Reference to ECtHR case law has corroborated and fed judicial reasoning by the CJEU on several occasions. The CJEU has used ECtHR jurisprudence to support, enrich and sometimes substantiate its reasoning.

**38** The CJEU has resorted to ECtHR case law to give flesh to the rights of the CFR and their limitations under Article 52(1) CFR. ECtHR case law has been used to clarify the concept of fundamental rights enshrined in the CFR[139] and shed light on the nature of limitations to their exercise.[140] ECtHR rulings have also been used to elucidate the way in which limitations should be assessed, particularly as regards control of legality and proportionality.[141] In other cases, ECtHR case law has been employed to guide the balancing of competing rights. In copyright-related cases, for instance, ECtHR interpretative standards were used in the context of weighing the right to intellectual property with freedom of expression.[142] In *Buivids*,[143] which focused on the tension between European data protection rules and online free speech, the CJEU invited the national judiciary to pay attention to ECtHR criteria regarding the balancing of the right to respect for private life and freedom of expression. In *GC and Others* v *CNIL*,[144] the CJEU drew on ECtHR case law to advise on the obligations of search engine operators when balancing the right to protection of personal data and the right to information in response to de-listing requests.

**39** Relevant case law indicates genuine interaction with ECtHR case law. ECtHR rulings are accommodated in CJEU decisions to facilitate and occasionally steer the CJEU's reasoning towards particular directions. In cases like *Funke Medien*,[145] for example, ECtHR standards on freedom of expression have played a key part in the construal of EU copyright legislation, encouraging a more relaxed interpretation of the exception of the Copyright Directive for reporting of current events. In other instances, ECtHR case law has been *creatively* used. *Pelham and others* is a clear illustration of this.[146] Here, ECtHR case law on freedom of artistic speech assisted the CJEU in shaping the right of reproduction, enriching it with elements beyond those codified in the Copyright Directive.

**40** Having said this, clearly, a detailed account of the ECtHR rulings referred to is not always the case. Reliance on ECtHR case law does not necessarily involve a thorough discussion of relevant decisions. In fact, the CJEU usually points to the element in the jurisprudence of the ECtHR that is useful for its assessment, without considerable analysis. Reference to ECtHR case law is commonly made alongside reference to the horizontal clause of Article 52(3) CFR. Nonetheless, here too, a rather easy, undemanding endorsement of CFR/ECHR "equivalence" can be observed. The CJEU does not systematically explain what is the precise element, when it comes to the scope, meaning and limitations of the CFR rights, that corresponds to the ECHR and its interpretation by the ECtHR. This tendency of the CJEU to approach questions of consistency between the CFR and the ECHR rather effortlessly, by broad reference to ECtHR case law, confirms the "special significance" of the ECHR in the EU legal order but is not without risk. The CJEU could place much emphasis on the ECHR minimum standard, refraining from examining whether the EU should offer more extensive protection to the particular ECHR-corresponding right of the CFR. Such temptation to use the ECtHR's interpretation as both a minimum *and* maximum standard should be resisted.

**41** *GC and Others v CNIL*[147] might be promising in this regard. Whilst the CJEU has directly drawn on ECtHR standards to inform the balancing of the right to protection of personal data and the right to information, it did not shy away from building on such standards, advancing its own understanding of the obligations of search engine operators when examining de-referencing requests. The CJEU put forward a data protection-sensitive reading of the duties of search engine operators even when the right to information outweighs the right to protection of personal data. When rejecting a de-refencing request, the CJEU ruled, search engine operators should, difficult and complex as it might be, afford precedence to links to information reflecting the "current" state of affairs. ECtHR case law may have offered some inspiration in this regard but the *dictum* was clearly of the CJEU. Now, with the EU's increased emphasis on regulatory intervention

139 See *Schecke* (n 48) and *Commission* v *Hungary* (n 70).

140 Ibid.

141 See *Schecke* (n 48) and *WebMindLicenses* (n 124).

142 See *Funke Medien* (14), *Spiegel Online* (n 14) and *Pelham and Others* (n 14).

143 See *Buivids* (n 87).

144 See *GC and Others* (n 103).

145 See *Funke Medien* (n 14).

146 See *Pelham and Others* (n 14).

147 See *GC and Others* (n 103).

that addresses the challenges of the digital era,[148] there may be ample opportunities for the CJEU to examine whether EU law may give more extensive protection to fundamental rights than the ECHR and the ways to do so.

148 See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2030 Digital Compass: the European way for the Digital Decade, COM(2021) 118.

# Transparency Reports of European CMOs

## Between legislative aspirations and operational reality – comparability impending factors and solution strategies

by **Mihail Miller and Stephan Klingner***

**Abstract:** Directive 2014/26/EU set out the right of rightholders to authorise collective management organisations (CMOs) within the European Economic Area that are best suited to their needs. To this end, the Directive established a harmonised governance framework for CMOs to ensure, among other things, transparency towards their stakeholders. Transparency is a key factor for inducing competition and efficiency in the collective rights management (CRM) market. For this reason publishing various business details became mandatory for CMOs in the EU. Especially information on "categories of rights" and "type[s] of use" are of great relevance for rightholders and licensees, as these are subject-matters of their interaction with CMOs. However, evaluating the disclosure of information on these subjects in the transparency reports of 21 music copyright CMOs of the EU, we find the terminology and the structure of information to be very heterogeneous. This makes comparative assessments very labour-intensive, potentially biased, inaccurate and highly inefficient. To this end, we present the use of controlled vocabularies as a strategy to harmonise the way this information is reported.

Keywords: collective management organisations; collecting societies; transparency reports; Directive 2014/26/EU; copyrights



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## A. Introduction

1 Today, the exploitation of copyrights is significantly more complex than it was before the digital era. Whereas in the past responsibilities were predefined by the de jure or de facto territorial monopoly positions of collective management organisations (CMOs) in the European Union (EU), the arrangement of copyright exploitation options is more liberal today: numerous options have been manifested in law, ranging from independent management of rights by the rightholders to delegation of the management to private independent management entities (IMEs) or multiple CMOs.[1] While management responsibilities may be limited to a certain geographical area, specific *"categories of rights"*, *"type[s] of use"*, or other subject-matter, pan-European competition/specialisation and collaboration/consolidation of CMOs has increased.[2]

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1 Directive 2014/26/EU of the European Parliament and of the Council of 26 February 2014 on collective management of copyright and related rights and multi-territorial licensing of rights in musical works for online use in the internal market 2014, Directive 2014/26/EU (European Union) Recital 19.

2 Sebastian Haunss, 'The changing role of collecting societies in the internet' (2013) 2(3) Internet Policy Review; Lucie

**2** However, it is frequently argued that these trends are harmful to the system of collective rights management (CRM). The primary points of criticism lie in the fragmentation of rights that is caused: additional administrative burden arose for rightholders and CMOs, which can only be covered by economically strong rightholders or CMOs; legal uncertainties arose for licensees as to the delimited field of use to which the licenses they seek to obtain apply.[3]

**3** Klobučník (2021) points out that problems of this kind may be resolved by providing a (legislative) *"compass"* to navigate through the landscape of the CMO (online licensing) market. As such it is not the complexity of the system per se, but the lack of its transparency that leads to aforementioned problems.[4]

**4** The transparency of CMOs can be evaluated from both a legislative and a practical perspective. Compared to previous legislation, Directive 2014/26/EU introduced a number of provisions that should have contributed to more transparency in the activities of CMOs.

**5** CMOs are now required to publish information about their internal and external business structure, membership terms and user tariffs, policies regarding royalty distributions, associated administrative fees and cultural deductions, and procedures for handling complaints and resolving disputes.[5]

**6** From a practical perspective, Hviid et al. (2017) evaluated the availability of public information of four CMOs for musical-repertoire for the aspect of multi-territorial licenses for traditional broadcasting and web streaming. It was found that the information is vague and unstructured, only partially available in English, and therefore difficult to understand for a broad readership, leading to legal uncertainty and high search costs for potential licensees to find out what repertoire they can use and what rights for which territories are granted.[6] These findings indicate a lack of transparency on the licensing activities of CMOs, which is also relevant for rightholders considering entrusting CMOs with the administration of their rights.

**7** In addition to public information on their websites, CMOs are obliged to publish annual transparency reports.[7] The mandatory contents of the transparency reports are defined in the Annex of the Directive 2014/26/EU. Among others, these are information regarding business structure and finance, which are particularly relevant for rightholders interested in transferring their rights for administration. As specified in the Directive, the financial information published in the transparency reports must include, inter alia, statements on royalty income collected by CMOs during the fiscal year, administrative and financial expenses, deductions for social, cultural and educational services, and the amounts of royalties distributable and distributed to rightholders and other CMOs, each broken down by *"categories of rights"* and *"type[s] of use"*.[8] The financial information should be reviewed by at least one qualified reviewer according to the criteria set out by Directive 2006/43/EC.[9] While this ensures that the transparency reports are valid according to general criteria, their evaluability is nevertheless limited.

**8** Neither Directive 2006/43/EC nor Directive 2014/26/EU specify exactly the semantics of *"categories of rights"* and *"type[s] of use"* [10], or what criteria should

Guibault and Stef van Gompel, 'Collective Management in the European Union' in Daniel J Gervais (ed), *Collective management of copyright and related rights* (Third edition. Wolters Kluwer 2016).

3 Morten Hviid, Simone Schroff and John Street, 'Regulating Collective Management Organisations by Competition: An Incomplete Answer to the Licensing Problem?' (2017) 7(3) JIPITEC 256 <http://nbn-resolving.de/urn:nbn:de:0009-29-45071>; Simone Schroff and John Street, 'The politics of the Digital Single Market: culture vs. competition vs. copyright' (2018) 21(10) Information, Communication & Society 1305.

4 Lucius Klobučník, 'Navigating The Fragmented Online Music Licensing Landscape In Europe A Legislative Compass In Sight?' (2021) 11(3) JIPITEC 340 <http://nbn-resolving.de/urn:nbn:de:0009-29-51921>.

5 Cláudio Lucena, 'Collective Rights Management' in Claudio Lucena (ed), *Collective rights and digital content: The legal framework for competition, transparency and multi-territorial licensing of the new European directive on collective rights management* (SpringerBriefs in Law. Springer 2015).

6 Hviid, Schroff and Street (n 4).

7 Directive 2014/26/EU of the European Parliament and of the Council of 26 February 2014 on collective management of copyright and related rights and multi-territorial licensing of rights in musical works for online use in the internal market (n 2) Art. 22.

8 ibid Annex 2.

9 ibid Art. 22 (4)

10 The understanding of these notions of Directive 2014/26/EU can only be derived implicitly: in Annex 2.a an exemplary list is given for types of use *"e.g. broadcasting, online, public performance"*; in Annex 2.b.i-ii, *"categories of rights"* are only mentioned in the context of the costs for rights management. In 2.b.v, the label *"type of use"* is used again in the context of the deductions actually taken from the licensing revenues. Based on these indications, it can be interpreted

be used to classify them. This leaves CMOs a great deal of latitude in presenting information on these subjects of representation. Yet, this information must be comparable across CMOs in order to promote competition.[11] Closely related to this are the questions how and which rights are transferred by rightholders to CMOs and which types of use are thus licensed to licensees. This two-sidedness of rights management by CMOs is sometimes expressed by referring to the assignment of rights by rightholders to CMOs as the *"upstream"* phase and the licensing of rights by CMOs to licensees as the *"downstream"* phase. Thus, CMOs compete in two markets: for rightholders and for licensees of their repertoire.[12]

**9** Unless otherwise provided by law or the statutes of a CMO, its general assembly of members shall determine which categories of rights, types of use and other subject-matter are to be managed.[13] In several EU countries, the transfer of rights is to be made *"in dubio pro auctore"*. In this respect, the transfer of rights is limited to those rights that are expressly set out in the authorisation contract.[14] While certain relaxations of this rule apply in some countries[15], the problem stays the same at its core: The protection of rights by CMOs in this case does not apply to types of use that were not foreseeable at the time of the conclusion of the contract.[16] Yet, whether or not a use can be attributed to specific transferred rights stays a matter of interpretation. To minimise variance, legal uncertainty and thus to ease copyright enforcement, publishers and CMOs usually apply standard contracts, having broad right bundles to be assigned by default. However, this limits the decision-making room of rightholders as to which rights can be transferred.[17]

**10** As blurred as the transfer of rights is in the upstream phase (from the rightholder to the CMO), as blurred it is in the downstream phase (from the CMO to the licensee). This becomes apparent, for example, in the case of tariff comparisons between CMOs: The transferred rights form the basis, while further, exploitation-specific parameters fine-tune the calculation of rates.[18] However, case law showed that the scope of the rights transferred for the use and the additional parameters used for the calculation of the tariffs were blurred to a degree where it was unclear whether the tariff charged by the CMO is actually fair. Thus, the comparability of CMO-tariffs is limited and multi-territorial competition of European CMOs can hardly be objectively disputed.[19]

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that *"categories of rights"* refers to rights managed in trust for rightholders and *"type[s] of use"* to rights of use granted to licensees by CMOs.

11 EU-Directives generally leave room for interpretation and implementation by Member States. Although comparability is not included as a direct requirement in the transparency obligations of Directive 2014/26/EU for CMOs to be implemented by Member States, Recital 36 advocates for *"comparable audited financial information specific to their activities"*, which can be ensured through uniform transparency report requirements. However, the assessment of the CMO's compliance with these requirements is as debatable as their vagueness. In order to assess the compliance of CMOs with the provisions of Directive 2014/26/EU, Art. 37 and Recital 51 foresee an exchange of information between competent authorities of Member States on CMOs. This could be inter alia useful to verify the comparability of the information provided in the transparency reports.

12 e.g. Mihály Ficsor, 'WIPO National Seminar on Copyright, Related Rights, and Collective Management: The Establishment and Functioning of Collective Management Organizations: The Main Features' (Khartoum, Sudan 16 February 2005) WIPO/CR/KRT/05 2 <https://www.wipo.int/meetings/en/details.jsp?meeting_id=7482> accessed 10 May 2022; Tilman Liider, 'The Next Ten Years in E.U. Copyright: Making Markets Work' [2007] Fordham Intellectual Property, Media and Entertainment Law Journal 52 <https://ir.lawnet.fordham.edu/iplj/vol18/iss1/7/> accessed 10 May 2022

13 Directive 2014/26/EU of the European Parliament and of the Council of 26 February 2014 on collective management of copyright and related rights and multi-territorial licensing of rights in musical works for online use in the internal market (n 2) Recital 19, Art. 8 (4)

14 ibid Art. 7

15 e.g. Section 31 (5) of the German Copyright Act extends the applicability of the transfer of rights to its intended purpose

16 This may be the case when the forms of dissemination of the works undergo technological changes.

17 Séverine Dusollier and others, *Contractual arrangements applicable to creators: Contractual arrangements applicable to creators* (law and practice of selected member states : annexes III & IV, European Union 2014) 55–57.

18 e.g. Directive 2014/26/EU of the European Parliament and of the Council of 26 February 2014 on collective management of copyright and related rights and multi-territorial licensing of rights in musical works for online use in the internal market (n 2) Art. 16 (2)

19 e.g. *Judgment of the Court of 13 July 1989. - François Lucazeau and others v Société des Auteurs, Compositeurs et Editeurs de Musique (SACEM) and others. - References for a preliminary ruling: Cour d'appel de Poitiers et Tribunal de grande instance de Poitiers - France. - Competition - Copyright - Amount of royalties - Reciprocal representation contracts. - Joined cases 110/88, 241/88 and 242/88.* [1989] 61988J0110, [1989] European Court reports 1989 Page 02811 (European Court) Grounds 26-33

**11** Given that individual modular right-assignments are now supported by law and the conditions for multi-territorial licensing practices are considerably harmonised, the transparency on right-assignments seems even more important than in the past.

**12** For these reasons, we examined in detail how categories of rights and types of use are reported in the transparency reports of 21 CMOs for copyrights in musical works according to different evaluation criteria. In order to refer to these terms simultaneously, we summarise information reported on these under the label *"license categories"*[20]. We conclude our analysis by identifying problems in terminological inconsistencies, language, presentation and structure of the reported information. It is shown, that a comparative assessment of the information is only possible with laborious, biased and inaccurate human interpretation, which raises the question of whether transparency reports in their current form are even a meaningful resource for rightholders to use in market analysis when comparing the performance of different CMOs. Conversely, we also find that many of the problems are avoidable if CMOs would use a consistent terminology. Thus, we propose the introduction of controlled vocabularies and therefore suggests a taxonomy and an ontology of collective license categories. In addition to the potential these artefacts may offer, we highlight their limitations and discuss further steps to enforce comparability of the investigated subject-matter.

## B. Methodology: Assessing transparency reports of CMOs for music copyrights

**13** To investigate whether CMOs have a common denominator on how they report details on *"license categories"*[21], we analysed the transparency reports of European CMOs managing music copyrights. To obtain our sample, we accessed the official list of CMOs published by the EU Commission.[22] At the time the study was conducted (November-December 2020) this list categorised CMOs by their residence in an EU member state. The list was not organised according to any other criteria such as the repertoire or the rights represented by the listed CMOs. In order to identify the CMOs representing music copyrights, we compared the listed CMOs with the member directories of CISAC[23], the largest international umbrella organisation of collecting societies[24] for author rights, and BIEM[25], the international umbrella organisation of collecting societies for mechanical recording and reproduction rights. The member directory of the CISAC provided the possibility to filter collecting societies based on different options, including the represented repertoire and their country of residence. As in our case collecting societies for music copyrights in EU countries were to be examined, we filtered accordingly. No such option was offered by BIEM, whose members also included societies for mechanical reproduction rights in literary and dramatic works. Thus, if collecting societies were members of BIEM but not included in the CISAC sample, their repertoire was cross-checked through their respective official websites.

**14** Only 19 out of the 31 sampled CISAC collecting societies were officially declared as CMOs by the EU member states. In the case of BIEM, these were 17 out of 26. Only three BIEM collecting societies were not already among the 19 CISAC member societies, and one of the three BIEM CMOs was not an officially declared CMO of the EU. Thus, the final list comprises 21 CMOs. For the selected CMOs, transparency reports for the financial year 2019 were collected from their respective public websites. We noted that two CMOs had not published a transparency report for the relevant year on their website during the survey period, so these CMOs were excluded from

20 *License categories* refers to the subject-matter itself which is being licensed and managed by CMOs that are officially regulated by the competent authorities in the EU. It might be seen as a property of *"collecting schemes"* of CMOs, which have already been analysed at a more abstract level by Lucía Reguera and others, 'Report on Collecting Schemes Europe' (2016). However, the focus of the study was on billing practices, distribution principles (e.g., whether monitoring technologies are used) and licensing modalities of collecting societies, rather than on the administered rights in detail.

21 CMOs for music copyrights account for the largest share of copyright collecting revenues in the EU European Commission, *Directive on collective management of copyright and related rights and multi-territorial licensing – frequently asked questions: MEMO/14/79* (2014).

22 European Commission, *Collective rights management Directive-publication of collective management organisations and competent authorities* (2021). According to Directive 2014/26/EU, this list must be updated regularly and contains information on the currently existing CMOs in the EU member states.

23 CISAC, 'Members Directory' (9 August 2021) <https://members.cisac.org/CisacPortal/annuaire.do?method=membersDirectoryHome> accessed 9 August 2021.

24 We use the term collecting societies to refer to both – collective management organisations (CMOs) and traditional organisations that do not meet the CMO-requirements of Directive 2014/26/EU but collectively represent the rights of rightholders.

25 BIEM, 'Members Societies' (9 August 2021) <https://www.biem.org/index.php?option=com_licensing&view=societes&Itemid=539&lang=en> accessed 9 August 2021.

further consideration, resulting in a sample size of 19 CMOs.

**15** We reviewed the disclosure of financial information on license categories[26] in the transparency reports using uniform criteria, as described in Table 1.

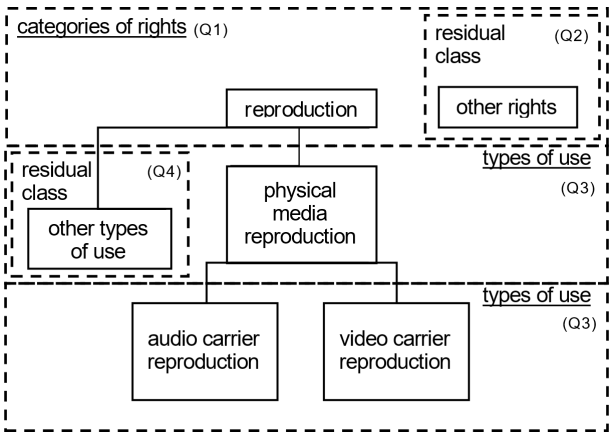
**16** Figure 1 illustrates the introduced concepts and their interrelations by example. We refer to the criteria by the introduced identifiers.

| Identifier / Label | Description |
|---|---|
| **Q1. number of reported categories of rights** | The total number of reported categories of rights. In the absence of a legal definition of categories of rights, we define inductively that these comprise all classes of licensed rights reported by a CMO at the top level of aggregation.In this context, aggregation means the grouping of license types with common attributes and cumulating their revenues. Other revenue sources such as financial instruments are also not counted as categories of rights. |
| **Q2. number of reported residual classes of categories of rights** | The total number of reported categories of rights that do not fit into the report's classification scheme, e.g., 'other', 'miscellaneous', or those categories of rights that are not actual aggregations of licensed rights, but are licensing modalities such as 'central licensing'. |
| **Q3. number of reported types of use** | The total number of types of use reported. In the absence of a legal definition of types of use, we define inductively that these comprise all classes of licensed rights reported by a CMO at the lower levels of aggregation, which are elements of categories of rights whose subtotals add up to the total of a category of rights. If more than two hierarchy levels were reported, the classes on the lower hierarchy level are counted as additional types of use. |
| **Q4. number of reported residual classes of types of use** | The total number of reported types of use that do not fit into the report's classification scheme, e.g., 'other', 'miscellaneous', or those types of use that are not actual aggregations of licensed rights, but are licensing modalities such as 'central licensing'. |
| **Q5. number of reported classes of rights for payments to other CMOs per CMO** | The number of classes of rights at the finest reported level of aggregation for which amounts for payments to other CMOs per CMO were reported: i.e., the number of types of use when categories of rights and types of use were reported, since the reported amounts for the types of use are subtotals of the categories of rights they contain. |
| **Q6. number of reported classes of rights for payments from other CMOs per CMO** | The number of classes of rights at the finest reported level of aggregation for which amounts for payments from other CMOs per CMO were reported: i.e., the number of types of use when categories of rights and types of use were reported, since the reported amounts for the types of use are subtotals of the categories of rights they contain. |

*Table 1: Criteria for the quantitative analysis of transparency reports*

26 At the outset of the study, it was notable that the CMOs that reported on both the categories of rights and types of use did so in a hierarchical manner. This makes sense as the broad categories of rights managed for rightholders are related to the special rights of use that the CMOs grant to licensees and which are reflected in the types of use. Based on this we derived our methodological approach and classified the *"top level"* rights reported in the transparency reports as categories of rights. The CMOs that reported on categories of rights and types of use in a flat way were therefore treated as having both variables counted as categories of rights (as only one hierarchical level existed). If there were additional hierarchical levels in the reports, these were classified as types of use. While this procedure is heuristic in nature, we wanted to avoid an interpretative classification per item of whether it was an affected category of right managed for rightholders or a type of use licensed to licensees of the CMO.

*Figure 1: Illustration of the abstract concepts described in Table 1*



17 While the first set of criteria (Table 1) was designed to quantify the heterogeneity in the way CMOs report information on categories of rights/types of use, the second set of criteria (Table 2) was compiled to identify qualitative differences.

| Identifier / Label | Description | Scale |
|---|---|---|
| **E1. separation by managed repertoire** | If the CMO manages other repertoire types in addition to musical repertoire, the separation of financial information should be apparent to them. | 0 = information on repertoire types is inherently mixed;<br>1 = information can be separated most of the time;<br>2 = separation is unambiguously clear |
| **E2. separation of performing and mechanical rights** | In music copyrights the CISAC differentiates between 'performing rights' and 'mechanical rights' (CISAC, 2020a). The classification of license types into one of these two broad right categories might provide a first starting point to differentiate information on business figures. | 0 = reported categories of rights and types of use do not allow for a binary mapping to performance or mechanical rights;<br>1 = some categories of rights or types of use do not allow for a binary mapping to performance or mechanical rights;<br>2 = most or all categories of rights and types of use are explicitly mapped to either performance or mechanical rights |
| **E3. separation by usage specifics** | The standard tariffs for granted performance rights or mechanical rights depend largely on the specifics of their use (Ficsor, 2005), i.e. where the usage takes place (e.g. broadcast, online, live). | 0 = information is not separated by specifics<br>1 = separated by specifics for the most cases<br>2 = by specifics for all the cases excluding residual categories |
| **E4. consistent vocabulary** | The vocabulary for the categories of rights and types of use should be consistent throughout the report, i.e., there should be only one label per term. | 0 = most terms have multiple labels<br>1 = some terms have multiple labels<br>2 = the vocabulary is consistent throughout the report |
| **E5. cohesive categorization** | There should be a fixed classification scheme to which the CMO adheres in reporting that is comprehensible, i.e., the criteria for consolidating the individual classes of rights should be consistent throughout the report. | 0 = no classification scheme is recognisable at all<br>1 = the classification scheme is partially blurred<br>2 = the classification scheme is clear and distinct |

*Table 2: Scheme for the qualitative analysis of transparency reports*

## C. Findings: heterogeneous terminology and aggregation structure

**18** According to the Annex of Directive 2014/26/EU, CMOs are required to list amounts for the categories of rights/types of use they manage in different sections (collections, distributions, payments, etc.) of the transparency report. We found that CMOs reported on average 9.79 categories of rights (Q1), with values ranging from 3 to 25, across all sections (see Table 3). The CMOs reporting a small number of categories of rights were strongly oriented towards the common differentiation between performing rights and mechanical rights, which they treated as major categories of rights. As a median, CMOs reported only one residual category (Q2). Only 9 of the CMOs surveyed reported amounts for specific types of use in addition to amounts for categories of rights. For these CMOs, the number of types of use (Q3) reported ranged from 8 to 50, with a median of 20.56. When CMOs reported types of use, the median number of residual types reported was two (Q4).

*Table 3: Raw data of the quantitative survey*[27]

| CMO / Q | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 19 | 4 | 15 | 12 | 4 | 10 | 9 | 4 | 5 | 5 | 8 | 25 | 9 | 6 | 3 | 13 | 12 | 8 | 15 |
| **2** | - | - | 3 | 4 | - | 1 | 1 | - | 1 | 1 | - | 6 | - | - | 1 | 1 | 3 | 2 | - |
| **3** | - | 10 | - | - | 8 | - | 21 | 14 | - | 19 | - | - | - | 29 | 19 | - | - | 15 | 50 |
| **4** | - | 3 | - | - | - | - | 1 | 1 | - | 2 | - | - | - | 4 | 2 | - | - | 2 | 2 |
| **5** | ? | 8 | 12 | 9 | - | - | 13 | 2 | 4 | 4 | - | 8 | - | - | 10 | - | - | 4 | - |
| **6** | ? | 8 | 12 | 8 | - | - | 3 | 2 | 4 | 4 | - | 8 | - | - | 4 | - | - | 6 | - |

**19** These figures do not necessarily indicate the range of categories of rights/types of use managed by a CMO, but rather the different approaches of an aggregated reporting. The more CMOs aggregate royalty revenues or payouts, the more difficult it is to compare the composition of these amounts with those of other CMOs. A possible reason for this heterogeneity may result from the vague description of the requirements in Directive 2014/26/EU and the resulting scope of interpretation for their implementation by national legislators. To illustrate this issue by an example, consider point 2.d.i of the Annex to the Directive:

> "(d) information on relationships with other collective management organisations, with a description of at least the following items: (i) amounts received from other collective management organisations and amounts paid to other collective management organisations, with a breakdown per category of rights, per type of use and per organisation;"

**20** This sentence can be interpreted in multiple ways: on the one hand, it could mean that the amounts received and paid out are to be disclosed by categories of rights and types of use for each cooperating CMO, but on the other hand, it could also mean that the amounts from representation agreements are to be disclosed by categories of rights, types of use and CMOs as separate items. When the Directive was implemented by the German legislative, this ambiguity was unravelled and the first interpretation just described was manifested in the Annex to Section 58(2) of the VGG[28]:

> "d) Information on relationships with other collecting societies, in particular: (aa) amounts received from or paid to other collecting societies, broken down by category of rights managed and type of use for each society;"

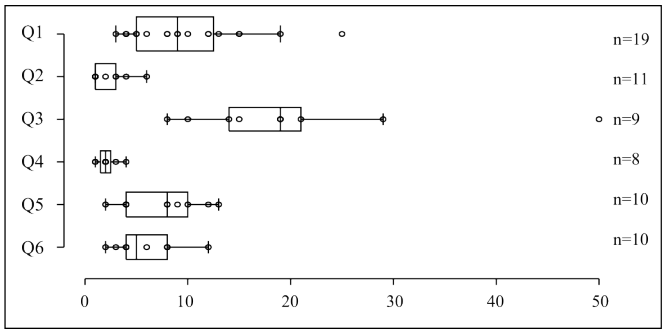
**21** However, it cannot be assumed that every national legislator follows this interpretation. Therefore, it is not surprising that not all of the surveyed CMOs reported the amounts per CMO broken down by categories of rights and types of use: eight CMOs did not report the amounts per cooperating CMO or only the total amounts under the representation agreements (Q5, Q6). Of course, such problems do not necessarily have to result from the lack of a clearly

27 Those CMOs for which no count is listed for Q3 and Q4 ("-") have mixed the reporting on categories of rights and types of use, at least from our methodological point of view (see also note 26 for clarification). It can therefore be assumed that they considered these terms to be synonymous. The question mark at Q5 and Q6 indicates that CMO 1 has reported varying sets of categories of rights / types of use depending on the cooperating society.

28 Translated from the German legal text.

defined reporting scheme in every case, but can also be due to organisational problems on the part of the reporting CMO.[29] In general, however, those CMOs that produce reports on a more fine-granular level allow readers of the transparency reports to gain deeper economic insights. Figure 2 summarises the quantitative findings in graphical form.

*Figure 2: Boxplots for the quantitative findings*




**22** While the previous explanations have dealt with the differences in transparency reports on a quantitative rather than a qualitative level, the following paragraphs assess various qualitative aspects of the reports (see Figure 3 for a graphical summary).

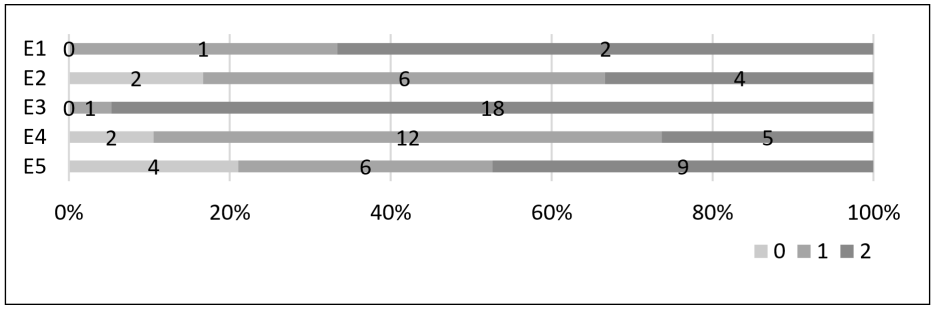



*Figure 3: Summary of the qualitative analysis of the reports*

**23** If a CMO manages multiple repertoire types, the distinction between the business figures reported for these particular repertoires should be clear (E1). While this distinction is required for the granting of rightholders' authorisations to CMOs (Article 5) and for certain requests for information (Article 20), it is not made explicit in Directive 2014/26/EU for transparency reporting. In the investigated sample, four of the CMOs also managed royalties for other types of works in addition to musical repertoire. Two CMOs reported the business figures required by the Annex to the Directive entirely and explicitly separated by repertoire types, one at least in several instances, and one CMO did not break them down at all. This particular CMO licensed only music repertoire, but served as an intermediary for domestic CMOs with other types of repertoire, to which it forwarded payments in categories of rights or types using the same designations, making it impossible to track what repertoire was covered by the reported indications. However, this type of differentiation is not explicitly required in the annual transparency reports according to Directive 2014/26/EU.

**24** In addition to the differentiation of figures for repertoire types, the distinction of amounts for performing rights and mechanical rights (E2) is also of interest for rightholders and licensees, for example, in order to estimate the administrative costs of the CMO for the respective rights. Among the CMOs examined, eleven managed both mechanical and performing rights, for which such a distinction is relevant at all. Four of them fully and explicitly assigned the reported categories of rights/types of use to one of these broad categories of rights. Six of the analysed CMOs assigned at least some of the reported amounts to either performance rights, mechanical rights, or statutory rights, or the assignment was implicitly apparent. One CMO used the same labels for categories of copyrights as for related rights, blurring the indications.

**25** A special case and excluded from this analysis is the NCB, a CMO that manages not only mechanical rights but also synchronisation rights. These type of rights are usually not negotiated with licensees on the basis of collective licensing tariffs, since the use of this cinematographic adaptation right is comparatively more intrusive. In several places, the NCB mixed the reporting on mechanical rights with that on synchronisation rights.

**26** All CMOs reviewed classified categories of rights/types of use by usage specifics, i.e., by the physical or virtual settings in which copyright use occurs (E3). Such a labelling was made by most CMOs for all categories of rights/types of use except for the residual classes, while only one CMO labelled various categories of rights/types of use based on licensing specifics (e.g. special contracts/standard contracts) or billing modalities (e.g. direct distributions) in-

29 For example, one CMO stated in the transparency report that a breakdown per category of rights managed and type of use was not always feasible "*due to IT system limitations*".

stead of the usage specifics. However, the separation based on different criteria of the usage specifics led to an inconsistent presentation of business figures within many reports. This was reflected, among other things, in inconsistent terminology (E4). Only five of the CMOs surveyed maintained consistent vocabulary throughout the report, i.e., they named semantically identical categories of rights/types of use equally. Twelve CMOs occasionally used different terms for the same categories of rights/types of uses, but to an extent that, in our view, made semantic matching still possible. However, two of the CMOs labelled the categories and types in a way that made it difficult to detect synonyms. Also, a comparatively large number of categories of rights (Q1) / types of use (Q3) were counted for these CMOs. Hence, despite all efforts, it is unclear whether these are actually additional categories or if they just could not be assigned to a synonym within the report. The use of a vocabulary is only consistent, if it is applied across the entire report.

**27** Besides a uniform vocabulary, coherent categorisation (E5) plays a crucial role in understanding transparency reports. This means that a clear and consistent classification scheme is used throughout the report to distinguish between categories of rights and types of use. We found this to be the case for nine of the CMOs analysed. Five other CMOs used a classification scheme that was vague in places, while four CMOs used no recognisable schemes to classify categories of rights or types of use in individual sections of the report. However, the differences in the composition and number of categories reported may also be due to organisational reasons, e.g. when a CMO serves as an intermediary for other CMOs, but does not manage the repertoire for its rightholders for certain categories of rights or due to limitations in information processing.

**28** Besides the heterogeneous form of their design and structure, the transparency reports complicated an analysis by additional factors. As only 10 out of 21 CMOs provided the report for the relevant financial year in English, the mapping of the labels to their general meaning was further complicated by the lack of language skills in the national languages of the reporting CMOs. Two CMOs reporting in their national language provided only scanned versions of their reports, which posed difficulties on an automatic translation process. Also, there was rarely an explanation of the semantics behind the labels used to denote the license categories, i.e., what types of licenses are covered by the indicated license category. The semantics could often only be implicitly inferred from the context, the rare clarifications in the transparency reports, and sometimes only after supplementing information sources with publicly available tariff information and familiarisation with the CMOs' very own vocabularies. Given all these challenges, matching the terms with their generic semantics was laborious, to varying degrees depending on the reporting CMO. To provide a clear overview, we summarise our findings in two problem areas:

- **P1: Terminology/Language:** CMOs use different labels to refer to identical concepts. This inconsistency is evident in the comparison within and between the reports. Additionally the comprehensibility of the semantics behind the labels is limited by the fact that only about a half of the sampled CMOs provided the transparency reports in English.

- **P2: Presentation/Structure:** The use of different labels by the CMOs would be a minor problem, if references were made to the generic equivalents explaining the meaning of the reported data in English. However, this completely contradicts the way the transparency reports are presented. The semantics of the labels can only be derived implicitly, if at all. Even a simple keyword-based search of the reports for word redundancies to extract meaning through contextualisation is made impossible by some CMOs by publishing the reports in a scanned form. A key aspect of the presentation is the structure of the data, i.e. the semantic and syntactic order in which it is arranged, that is, the criteria according to which the business figures are to be classified, and the data format to be used. The CMOs chose different criteria, granularities and ordering schemes for aggregating the data.

**29** Overall, extracting information from the data could only be achieved at the cost of additional efforts, the use of external documents from the CMOs and a significant amount of human interpretation. Rightholders and licensees face the same hurdles, biases and uncertainties when reading transparency reports, which basically prevents *"transparency"* as the central goal of these reports.

## D. Consolidation through structured transparency

**30** In order to ensure the transparency of CMOs' public data, it is not only necessary to make the data available to the public but also to structure the data according to uniform criteria. The introduction of a controlled vocabulary for this kind of information might be a viable measure. According to the Publications Office of the European Union, controlled vocabularies serve to organise knowledge between different actors in a harmonised way and are a foundation for the machine-readability of metadata, improving, among other things, the discovery and cross-comparison of data on the web.

The Publication Office itself hosts a range of controlled vocabularies and related artefacts.[30]

**31** However, as we have shown in the previous sections, there is no consensus among CMOs on how to inform the public about what categories of rights they exercise for their managed repertoire. If it existed, it would simplify processes for rightholders and licensees on the interface to CMOs. Directive 2014/26/EU states in several places that licensees, rightholders and CMOs should use industry- or EU-developed standards and procedures when exchanging data where possible.

**32** The CISAC, as the umbrella organisation for CMOs, provides a few publicly available data format specifications which are to be implemented for certain business processes in the electronic data interchange (EDI) between stakeholder parties. The Common Royalty Distribution (CRD) format is one of these specifications to be used by CMOs for the reporting of royalty distributions to other CMOs and rightholders. This specification also defines lookup tables for *"distribution categories"* and *"exploitation source types"* to be used when applying the format.[31] For these, fixed codes are defined with unique references to one concept each, e.g. *20: Radio* or *01: Radio broadcaster*. Although the meanings of the codes given as examples for the different named resources do not translate perfectly, they describe aspects that happen in the same licensing constellation: The distribution category *20* refers to the type of use (*"Radio"*), while the exploitation source type *01* describes the licensee type (*"Radio Broadcaster"*).

**33** So, while there are data interchange formats that specify the reporting on license categories, these are designed for specific use cases. In addition, the licensing contexts are also insufficiently structured within the defined data interchange formats. Therefore, introducing a domain-wide taxonomy would be a reasonable way to describe categories of rights and types of use in a controlled manner.

**34** To develop a taxonomy for license categories, we followed an inductive approach based on the analysed transparency reports. First, we established classification criteria for the objects of interest. To ensure the generic applicability of the classification criteria, organisation-specific characteristics[32] are not part of it; instead, the criteria targets the subject-matter that is most common across the CMOs: the managed categories of rights and licensed types of use.

**35** License categories can be described by a combination of concepts. Each elementary concept[33] is defined within a controlled vocabulary with one unique label. For the sake of illustration, we defined a set of elementary concepts which is based on the internationally harmonised copyright types manifested in the Berne Convention (BC; 179 contracting states[34]) and the WIPO Copyright Treaty (WCT; 110 contracting states[35]) and the derived concepts from the sample of transparency reports we examined. To map license categories to the internationally harmonised copyright types and to the broad categories of rights of CMOs, we defined the copyright types as subsets of performing rights and mechanical rights. Each license category $A$, characterised by a set of elementary concepts (e.g. {*"playback"*, *"performance"*}) describes a superset/superclass ($\supseteq$) of license category $B$, which is described by at least one additional concept (e.g. {*"playback"*, *"background"*, *"performance"*}).

**36** Each license category described by the same concepts contains the same features, but the order in which the labels of the concepts are textually concatenated in the form of compounds represents their hierarchy in the actual taxonomy. To achieve non-arbitrary concatenation, a fixed scheme had to be established. During our study, we identified four *metaconcepts* to which we assigned the elementary concepts. As shown in Figure 4, we propose that a license category is denoted by a tuple of four defined elementary concepts – following the pattern (Manifestation type, Consumer medium, Licensee type, Exploited copyright type) according to the order of their corresponding metaconcepts.

30 Publications Office of the European Union, 'EU Vocabularies: Controlled vocabularies' (n.d.) <https://op.europa.eu/en/web/eu-vocabularies/controlled-vocabularies> accessed 19 August 2021

31 Gus Jansen (APRA), 'Common Royalty Distribution: EDI format specifications: Version 2.0, Revision 4' (18 August 2010) CRD09-1005R4 <https://members.cisac.org/CisacPortal/consulterDocument.do?id=19514> accessed 8 September 2021

32 Such as CMO tariff designations (e.g. *"Phono Standard"*) or specifics of distribution policies (e.g. *"Work by Work"*). These are certainly relevant metadata for comparing CMO services, but do not form the core of the legal goods in trade.

33 Elementary means that the concept does not consist of a combination of other concepts.

34 WIPO, 'Berne Convention for the Protection of Literary and Artistic Works: Status October 1, 2020' (1 October 2020) <https://www.wipo.int/export/sites/www/treaties/en/documents/pdf/berne.pdf> accessed 8 September 2021.

35 WIPO, 'WIPO Copyright Treaty: Status on March 22, 2021' (22 March 2021) <https://www.wipo.int/export/sites/www/treaties/en/documents/pdf/wct.pdf> accessed 8 September 2021.

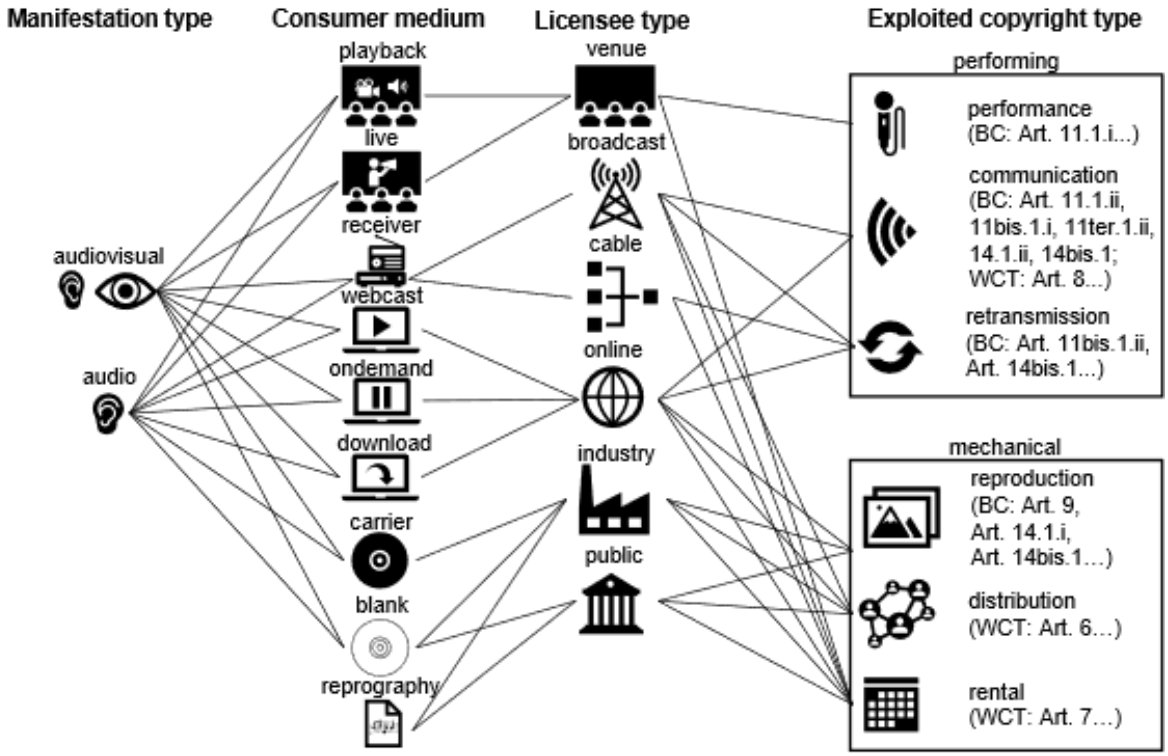



*Figure 4: Mapping of the elementary concepts and their interrelations within the consideration of the four metaconcepts*

**37** In line with the proposed definitions we mapped the license categories of those twelve CMOs that reported amounts per license category for each representation agreement (Directive 2014/26/EU, Annex 2.d.i). For each CMO-specific label for a reported license category, we disambiguated the quadruplet described above. In case a matching elementary concept for one of the four metaconcepts couldn't be identified, a placeholder (?) was inserted.

**38** We made an exception for those license categories that did not qualify for a specific type of copyright or could not be classified as either performing or mechanical rights: these were assigned to the virtual concept *"mixed"* instead of having *"?"* at the last position of the quadruplet. Especially in the case of online rights, licenses are granted frequently for both performing and mechanical rights, which is why this does not always have to be the fault of the reporting, but can also correspond to the exploitation practice of a CMO.[36] Table 4 shows how many placeholders per metaconcept were introduced to describe terms for which no elementary concept corresponding to this metaconcept could be assigned. Overall 115 labels reported by the CMOs were mapped to 52 generic terms.

36 CISAC, 'On-line repertoire definition: European rights splits (September 2020)' (2020) <https://members.cisac.org/CisacPortal/openDocumentPackDP.do?item=item5&docPackId=174> accessed 12 August 2021.

| Manifestation type | Consumer medium | Licensee type | Exploited copyright type |
|---|---|---|---|
| 32 | 24 | 12 | 11 |

*Table 4: Number of placeholders introduced per metaconcept for the mapping of the CMO-specific labels to the concepts*

**39** For the final taxonomy[37] all classes that broke the scheme, in a sense where between two specified elementary concepts at least one elementary concept was not substituted by a placeholder (n = 8), were removed. The reason for this was the implementation of the monohierarchical structure of the taxonomy: The concatenation of the elementary concepts took place in the reading direction from left to right. Placeholders were deleted in the process. To illustrate the latter, consider the following example: *(? ; ? ; venue ; communication)* ↦ *"venue communication"* is a child node (⊊) of the ancestor node *(? ; ? ; ? ; communication)* ↦ *"communication"*. However, in reality, it should also be a child of *"venue performing"* and therefore a sibling of *"venue performance"*, a relationship that gets lost when the proposed taxonomic approach is applied, since multiple inheritance is not permitted[38].

**40** The relationships between license categories can be visualised as tree structures: each root node represents a broad category of rights, while each child element represents a specialisation of its parent node (e.g., see Figure 5, Figure 6)

**41** By using the proposed taxonomy license categories can be classified corresponding to a controlled vocabulary. In addition, hierarchies of different license categories can be illustrated. his is not only useful for classifying the license categories but also for aggregating amounts on them, e.g., as listed in the transparency reports.

**42** The formal approach based on the definition of elementary concepts and their assignment to metaconcepts in a predefined order means that the hierarchy can be generated automatically. Based on these fixed rules, the taxonomy can be extended according to a fixed pattern and thus revised without substantial changes. Therefore, as licensee types and consumer media are subject to adaptation as new exploitation channels emerge, the taxonomy presented above can be extended accordingly.

**43** Yet, as mentioned earlier, taxonomies are only capable of displaying monohierarchical inheritance. Thus, CMOs have to stuck to the predefined inheritance logic and consolidate their information according to it – or a structuring concept other than a taxonomy must be used.

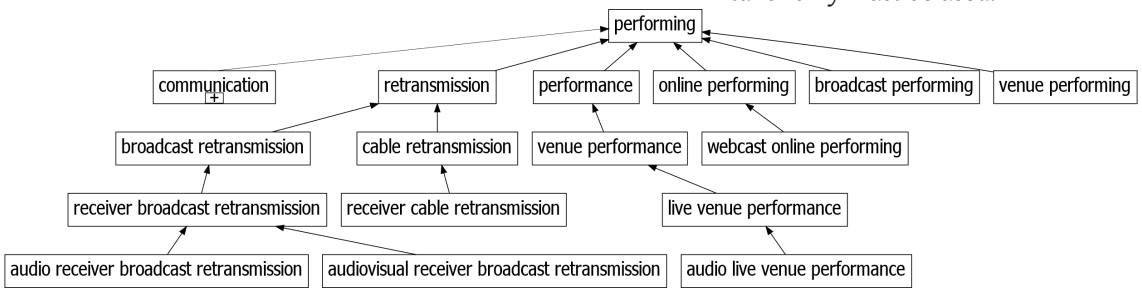



*Figure 5: Taxonomy of "performing" rights*

37 Mihail Miller, 'Collective Rights Management Taxonomy' (2022) <http://dx.doi.org/10.25532/OPARA-178> accessed 19 July 2022.

38 The broad categories of rights *"performing"* and *"mechanical"* where only introduced for practical reasons – to allow a mapping of collecting schemes of those CMOs that did not disaggregate information on the actual copyright types.

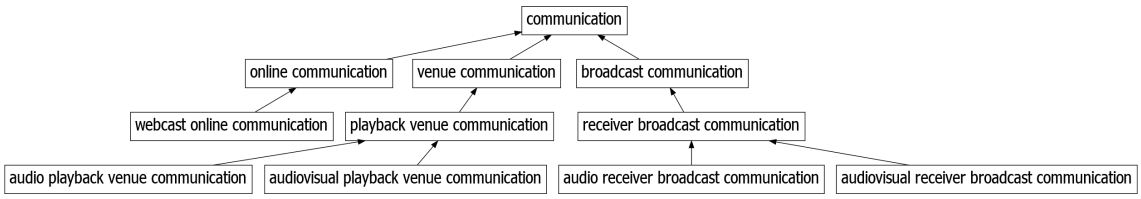



*Figure 6: Sub-branch "communication" of "performing" rights*

## E. Developing an ontology of collective rights management

**44** With the help of the proposed taxonomy, license categories of CMOs can be annotated in a consistent way. However, taxonomies are not sufficiently expressive as they are limited to monohierarchical structures and a limited scope of classes. Given how specific the needs of licensees and rightholders can be, the classes provided with annotations might be too generic to reflect the information required by licensees or rightholders.

**45** Another approach to structure the information on license categories is to formally define the permissions and constraints of each license category and to allow for the aggregation of schemes according to criteria set dynamically by stakeholders. This can be done with the help of Rights Expression Languages (REL). However, existing RELs are difficult to use in specific application contexts because they are – in high contrast to taxonomies – too expressive.[39] This is reflected in the fact that the focus of RELs is on the syntactic and not on the semantic level of expression. To enrich RELs with semantics and to bring them into the context of the application domain of Intellectual Property Rights, the *IPROnto* was developed, which combined several RELs (*ODRL, Creative Commons, MPEG-21*) and put them into the overall context of the WIPO framework. A successor to *IPROnto* is the *Copyright Ontology*, which defines three models for a common understanding of the creation, legal basis and use cycle of copyrights and related rights in works of intellectual property.[40]

**46** We drafted a minimalistic ontology using the W3C standards Resource Description Framework (RDF) and Web Ontology Language (OWL), which put the concepts and their relationships defined in the *Copyright Ontology* into the context of CRM.[41] The ontology is visualised in Figure 7.[42]

**47** With the help of the ontology, logical statements can be formulated. For example, an instance of the class *"Aim"* defines a motivation of a "*Licensee*" to use a *"SubjectMatter"* of a *"Copyright"*[43], which refers to a *"Work"* and is owned by at least one *"RightHolder"*. *"SubjectMatter"* is further specified by the types of works, the territories, as well as other specifics such as those highlighted in the previous section, for which the authorisation of a *"CMO"*, the licensing and thus also the utilisation of rights takes place.

**48** With a well-defined model, the data publicly reported by the CMOs can be marked up, allowing them to be classified in the overall CRM framework. For example, information on revenue generated from license categories in transparency reports can be formatted in platform-independent and RDFa-enabled HTML instead of a PDF file. Using RDFa, license categories can be marked as instances of ontological concepts and their interrelations. Transparency reports produced in this way would then be machine-readable and thus suitable for comparison with automated agents. The same applies to the publication of tariff information. The proposed steps would enable interested parties to understand CMO services in an accessible way, having to get familiar with only one controlled vocabulary used to describe these kind of services. Furthermore, the enrichment of service or tariff information with structured data would offer a possibility to aggregate information across CMOs: For example, query-based services can be developed to compare tariff or service information between CMOs[44] or to identify macroeconomic dynamics through the visualisation of inter-CMO cashflows[45].

39 Renato Ianella, 'Open Digital Rights Language (ODRL)' (2007) <https://core.ac.uk/download/pdf/41230497.pdf> accessed 22 September 2021.

40 Roberto García, 'A Semantic Web Approach to Digital Rights Management' (2006).

41 The reused concepts are marked as *"external"* and highlighted darker in Figure 6.

42 Stephan Klingner, 'Collective Rights Management Ontology' (2022) <http://dx.doi.org/10.25532/OPARA-176> accessed 19 July 2022.

43 *"Copyright"* is defined as a superclass of other rights like the *"CommunicationRight"* in García's model, which is based on the understanding of the *World Intellectual Property Organisation.*

44 García Roberto and Gil Rosa, 'Copyright Licenses Reasoning an OWL-DL Ontology' (2009) 188 Frontiers in Artificial Intelligence and Applications 145.

45 One example of a tool with such functionality can be accessed here: <https://creativeartefact.org/artefacts/statis-

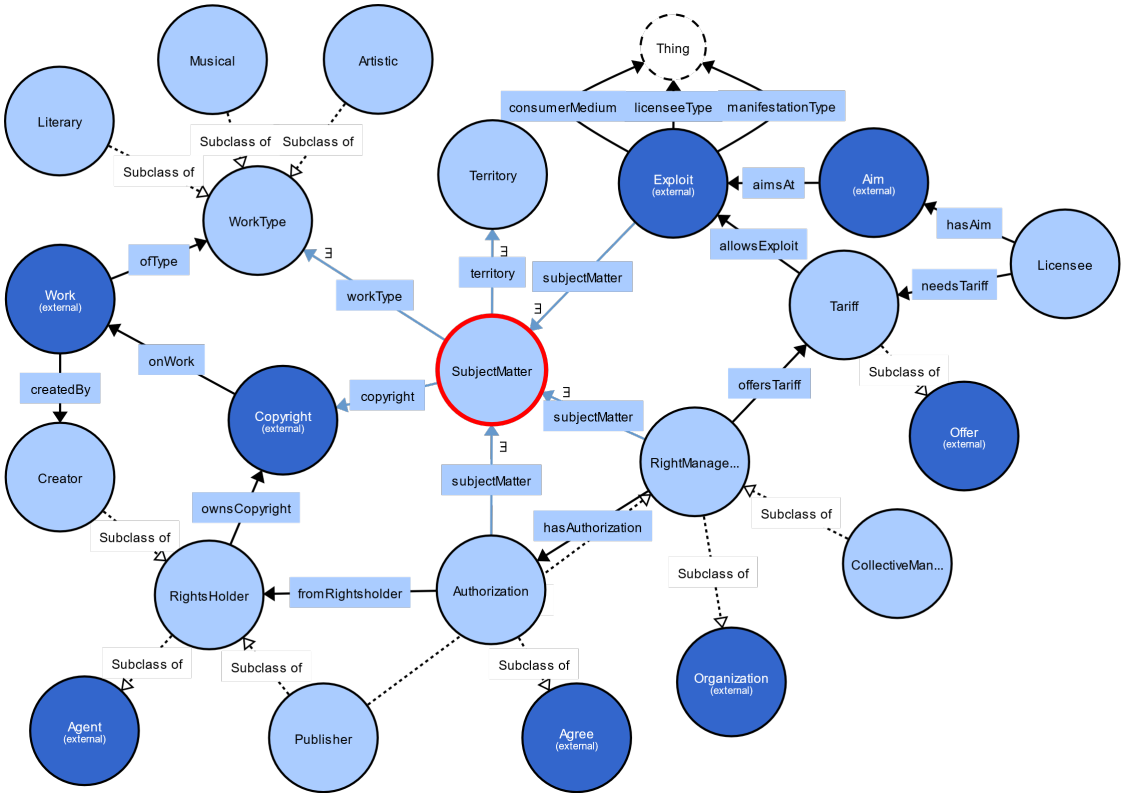



*Figure 7: A minimalistic ontology of collective rights management (visualised with WebVOWL)*

## F. Conclusion and final remarks

**49** In the EU, national laws are gradually being harmonised as part of the Digital Single Market strategy. Harmonisation of CMO activities is an important catalyst for an increased competition and consolidation in the CRM market. However, an important prerequisite is transparency, which serves as the basis of information required for objective decisions by stakeholders. Transparency can be prescribed by law by specifying what information must be made public and how.

**50** Yet, the current state of the EU internal market shows that the information to be published by CMOs is specified too vaguely. The lack of a uniform classification system for license categories and a structured reference point for the business concepts has led to an inconsistent provision of information by CMOs. The steps that need to be taken to support the transformation of public information about CMOs into insights were discussed in this paper. In working towards this goal, this paper followed an inductive approach: while focusing on CMOs for music copyrights, we reviewed the publication of categories of rights and types of use in the transparency reports for 21 CMOs. As we found inconsistencies regarding labelling and structuring of the data, we proposed the following consolidation process: First, a taxonomical approach for annotating license categories in music copyrights was introduced. It was based on the semantic merging of the various terms used by the analysed CMOs as well as on the introducing of a common vocabulary for concepts with a corresponding classification scheme. Second, as a more complex but semantically richer solution, a draft for an ontology was presented. As we showed, both approaches have advantages and disadvantages and require consensus building on the part of the CMOs.

**51** From a political point of view, the first option for building this consensus would be to promote an organic, market-based mechanism on the part of the CMOs. In this regard, it is argued that CMOs already benefit from mutual transparency as it enables them to operate the cooperative system of mutual representation agreements.[46] Shared databases such as CIS-Net promote cross-comparison between peer societies at different levels. At the operational level,

tics/statistics_international/>. The data for this tool refers to the business year 2019 and was compiled manually. Updating and chronologising this database would be possible, but would require introduction and application of appropriate data formats.

46 WIPO, 'WIPO Good Practice Toolkit for Collective Management Organizations (The Toolkit): A Bridge between Rightholders and Users' (2021) <https://www.wipo.int/edocs/pubdocs/en/wipo_pub_cr_cmotoolkit_2021.pdf> accessed 25 October 2021.

they enable them to cross-check uses with each other's repertoires. At the strategic level, they can provide CMOs with a reference point for identifying their core competencies and help them determine their position in an increasingly dynamic market environment. For example, economies of scale from multi-territory licensing in the online sector could relieve the burden on smaller CMOs and allow them to specialise and improve their services in analogue licensing. Reciprocal transparency could play a crucial role in defending the relevance and competitiveness of CMOs against new and agile market players such as IMEs or modern publishing administrators. It could enhance consolidation in the CRM market and thus counteract the progressive fragmentation of copyrights. While these databases exist, they are limited to the CMOs and are not available to licensees or rightholders. Enabling public insights into this system, while abstracting from confidential data, would provide market participants with more flexibility in assessing the CRM market.

**52** Here, the conflict of interest between CMOs, who benefit economically from information asymmetries, and rightholders/licensees, who are harmed by them, must be addressed. For example, according to online music service providers (OMSPs) as licensees of CMOs, the tariff setting of CMOs is non-transparent despite all applicable provisions. According to the suspicion of an OMSP, this manifests itself in the fact that the prices of competing offers converge and thus indicate anti-competitive practices, which is difficult to prove.[47]

**53** Therefore, current legislative measures may not be sufficient to promote greater transparency in the disclosure of public information on license categories. Legislators might consider to enforce stricter rules for the management of public information in the CRM market. Still, to ensure consistent compliance with legislation in the CRM market, it may not be sufficient to draft binding Directives in natural language, as this leaves CMOs wide room for interpretation, thus increasing legal uncertainty and potential litigation costs. To reduce these problems, the establishment of a strict and binding data management regulation could be a sound use case for machine-readable law.[48]

**54** Overall, we have shown that CMOs report differently on their managed categories of rights and types of use. Our key assumption in the discussion of this issue was that terminological harmonisation can reduce many of the problems associated with CMOs providing public information to licensees and rightholders.

**55** However, the problems may lie deeper, that is, not at the level of presentation, but at the level of the actual aggregation of right bundles. CMOs license rights differently and standardised tariffs offer different bundles of rights to licensees. So before implementing a public data management module into the CRM system, it might be worthwhile to break down the bundles of rights granted to and by CMOs to their atomic level and give rightholders and licensees complete freedom in transferring and acquiring the rights for their particular needs. Still, this approach could pose even greater challenges to the CRM market, as CMOs would have to re-implement their licensing system to allow for such customised configuration options. The process costs here can only be reduced by strict and clear formulation of CMO services.

**56** That said, perfect comparability may not be possible in all cases. While the categories of rights managed by CMOs are based on international law such as the Berne Convention, their licensing practices for different types of use are still subject to membership-control. The introduced classification system for license categories on the basis of metaconcepts could be helpful in this respect, but still needs to be evaluated.

47 European Commission and Directorate-General for Communications Networks, Content and Technology, *Study on emerging issues on collective licensing practices in the digital environment : final report* (Publications Office 2021) 111–112. The annex to this report (262-380) contains a natural language listing per Member State of the types of use managed by the studied CMOs and protected by their respective national legislations. This listing can serve as input for the further development of the classification system introduced in this paper and later as a uniform basis for CMOs' reporting on the rights they manage.

48 Patrick A McLaughlin and Walter Stover, 'Drafting X2RL: A Semantic Regulatory Machine-Readable Format' [2021] MIT Computational Law Report <https://law.mit.edu/pub/draftingx2rl>.

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