

jipitec

1 | 2020

Volume 11 (2020)
Issue 1 ISSN 2190-3387

Editorial

by Chris Reed

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by Alain Strowel and Amandine Léonard

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Journal of
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Jipitec

Journal of Intellectual Property,
Information Technology and
Electronic Commerce Law

Volume 11 Issue 1 April 2020

www.jipitec.eu

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A joint publication of:

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ISSN 2190-3387

Funded by



Deutsche Gesellschaft für
Recht und Informatik e.V.

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Editorial

by **Chris Reed**

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Recommended citation: Chris Reed, Editorial, 11 (2020) JIPITEC 1 para 1.

- 1 This edition goes to press during the Covid-19 crisis, and it has been fascinating to see how fast and effectively the world has switched many of its activities to digital technologies. Along with the successes there have, of course, been legal problems, and these will provide material for this and other journals for years to come.
- 2 E-commerce was an important technology to cope with the temporary closure of bricks and mortar shops, and there can be no doubt that its success in keeping households supplied with many of their needs will accelerate the move of consumer shopping online.
- 3 Here in the UK, at least, the initial problems with online food shopping were almost entirely caused by physical logistics bottlenecks, such as shortages of delivery vehicles and drivers, and both supermarkets and the pure online players such as Amazon have been quick to upgrade their offerings. No major legal issues involving this kind of e-commerce have so far come to light. But the long-term competition law implications of increasing centralisation of e-commerce are likely to be ripe for investigation. And new sectors of the economy have moved into e-commerce as a response to the pandemic. The European Monitoring Centre for for Drugs and Drugs Addiction found in its special report of May 202, COVID-19 and drugs: Drug supply via darknet markets, that the retail supply of illegal drugs had substantially transferred to online selling via the dark web.
- 4 For online communications technologies the story is more immediately interesting. In the first few days of lockdown, technologies such as Zoom and Microsoft Teams, and cloud technologies for hosting applications and data for remote access, won high praise as businesses rapidly set up remote working and universities transitioned to online teaching. The effectiveness of remote working has reportedly surprised many businesses, and it seems unlikely that a full return to office working will happen because of the potential cost savings and efficiency improvements. However, within weeks problems with Zoom's security were identified, and we had the first instances of meetings being "Zoom-bombed", and confidential corporate discussions being invaded by competitors. These have now been remedied via upgrades, but have highlighted some of the legal and regulatory risks which digital security has to guard against. Microsoft faced difficulties in scaling its cloud services to meet demand and was forced to prioritise those customers running essential services by downgrading the service to others, which raises contractual issues. As these technologies become further embedded into commercial activity, other legal issues are sure to arise – at the moment difficult questions like data location are largely being ignored because the immediate need is to keep operations working, but they will have to be addressed sooner rather than later.
- 5 Entertainment has been hard hit, with cinemas, theatres and bars likely to be closed (at least for this purpose) for quite some time. Netflix and Amazon rapidly took up the slack for movies, and this has inspired the major movie studios to enhance their direct online offerings. There is currently a dispute between Universal Studios and AMCE Entertainment, one of the largest movie theatre chains, over Universal's plans to release new movies simultaneously in theatres and online, breaking the current business model. Competition lawyers will find much to interest them as this develops. Music and live theatre have both moved online, streaming both live and recorded performances. This creates an interesting research topic, as the framework

of intellectual property rights was created for the offline world and does not map well onto this kind of activity.

- 6 And the efforts of national governments to manage the effects of the virus epidemic have attracted the interest of data protection and human rights lawyers, particularly in relation to tracking apps. Issues which are currently unclear, particularly relating to anonymisation and repurposing of data, will receive close attention, and all these schemes clearly engage the fundamental right of privacy and perhaps free speech also.
- 7 There is, apocryphally, an ancient Chinese curse which runs, “May you live in interesting times.” Although the legal issues which Covid-19 is highlighting are, indeed, interesting, I suspect that readers might have preferred to continue with their previous, duller existence.

Chris Reed

Cutting Back Patent Over-Enforcement

How to Address Abusive Practices Within the EU Enforcement Framework

by **Alain Strowel and Amandine Léonard***

Abstract: The debate over the degree of flexibility at the disposal of national courts in Europe to grant, deny, or tailor, injunctive relief in patent litigation seems to be a never-ending story. In most jurisdictions, absent exceptional circumstances, findings of infringement lead national courts to grant, quasi-automatically, an injunction. However, some scholars as well as industry players, have argued that in light of recent changes in litigation behaviour as well as technology developments, a general principle of proportionality should play a more prominent role vis-à-vis injunctive relief. It is in particular with reference to Art. 3(2) of the Enforcement Directive that such claims have been made.

If UK courts have been inclined to consider that, under certain circumstances, a balance of interests may take place before granting a permanent injunction, German courts on the other hand have firmly stood on the ground that the principle of proportionality should not interfere with the right of patent holders to obtain such

remedy. However, most recently, the German Ministry of Justice published a draft amendment to the German Patent Act providing some guidance on the role of proportionality vis-à-vis the rules of injunctive relief.

The issue of flexibility and injunctive relief is symptomatic of a broader debate regarding potential over-enforcement practices by right holders and the means to overcome or reduce the negative effects of these practices. Overall, this article examines how the origins and justifications of the Enforcement Directive, which focus on fighting piracy and counterfeiting, may affect the applicability of the principle of proportionality in the ever-changing context of patent law. How national courts have (or have not) relied on different mechanisms to infuse more flexibility in case of over-enforcement practices by right holders. And finally, how the principle of proportionality as well as the principle of the prohibition of abuse of rights may serve national courts in this endeavour of limiting excesses in patent litigation.

Keywords: Patent litigation; Flexibility and Injunctive Relief; Proportionality; Abuse of Rights; Patent Assertion Entities; Patent Trolls; Article 3(2) Enforcement Directive; Directive (EU) 2004/48

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Recommended citation: Alain Strowel and Amandine Léonard, Cutting Back Patent Over-Enforcement – How to Address Abusive Practices Within the EU Enforcement Framework, 11 (2020) JIPITEC 3 para 1.

A. Introduction

1 Intellectual property (IP) laws have been designed to provide an incentive for creative, inventive, and entrepreneurial efforts by granting exclusive rights to control the market access of protected goods or services. To ensure that the substantive IP laws were effectively applied in the European Union (EU) and that innovation and creativity were not discouraged, the European legislator adopted in 2004, just before the EU enlargement to 10 new Central and Eastern European countries, the Directive 2004/48 on the enforcement of IP rights (hereafter, the Enforcement Directive or IPRED)¹.

2 Undeniably, the harmonisation of the effective civil means of enforcing IP rights (IPRs) is important for the success of the internal market as well as for the

KULeuven, Munich IP Law Center, attorney, Brussels and Dr. Amandine Léonard, Emile Noël Postdoctoral Fellow at the Jean Monnet Center, NYU School of Law. Affiliated researcher at the KULeuven, Centre for IT&IP Law, imec (CiTiP). The authors acknowledge financial support from IP2Innovate. The views and opinions expressed in this article remain those of the authors.

1 Directive (EC) 2004/48 of the European Parliament and the Council of 29 April 2004 on the enforcement of intellectual property rights. O.J. L 157/45, 30/04/2004. (Enforcement Directive or IPRED).

* Prof. Alain Strowel, UCLouvain and Université Saint-Louis,

objectives of substantive IP laws. The Enforcement Directive has been interpreted and applied in ways that strengthen the system of protection in favour of right holders. Great emphasis has been put on one of the aims of the Directive to provide for a “high level of protection” of IP rights, and therefore by extension, a high level of protection for IP right holders². However, the pursuit of such a high level of protection may lead to an imbalanced system of litigation and could generate new opportunities for over-enforcement practices. Several commentators in Europe have highlighted these risks of (overly) strong IP enforcement tools, especially in the patent litigation field.³

- 3 The risk of over-enforcement is quite well discussed and documented in the United States (US). For the past 10 years, US commentators have claimed that patent holders benefit from opportunities to “abusively” exercise their patent rights or that new uses of patents are inappropriate as they keep pushing the system further away from its initial objectives⁴. The rise of actors on the enforcement scene such as Non-Practicing Entities (NPEs) (also called Patent Assertion Entities (PAEs) or patent trolls) has been at the heart of the debate⁵. Such

phenomenon is not limited to the US and these actors are also present on the European scene.⁶ Those entities do not necessarily bring many cases before the courts (see *infra* the analysis of the case law) but might be granted excessive power in the pre-litigation phase and the negotiation of authorizations. Litigated cases do not reflect the whole landscape of excessive behaviours, and many threats and burdens on businesses caused by the risks of patent enforcement and remedies might remain unnoticed. Nevertheless, the risks of over-enforcement in the patent field is also caused by some measures provided by the Enforcement Directive which, as will be reminded (see *infra*), was primarily meant to grant to copyright and trademark owners new ways to combat piracy and counterfeiting.

- 4 This paper reflects on these general concerns and in particular on the capacity (or lack thereof) of the Enforcement Directive to provide certain tools and remedies to defendants in patent infringement cases which may be victim of over-enforcement practices by right holders. In the first part of the paper, we contend that, due to the fact that the Enforcement Directive has mainly been drafted with the view to more easily fight piracy and counterfeiting, it is less fit for patent litigation involving disputes between *bona fide* commercial parties operating within the normal course of business. Therefore, we argue that, under particular circumstances such as the presence of complex products, PAEs, and the difficulties to assess patent validity in the new and fast changing technological environments, courts should infuse more flexibility in the ways in which enforcement claims are considered and in particular in the balancing processes leading to the imposition of permanent injunctions. The second part of this paper reviews a sample of cases involving dubious or excessive practices by PAEs in the enforcement of patents in Europe and the tools used by national courts to limit or sanction these practices. The practices discussed can be (and to some extent have been) adopted by all sorts of patent holders (PAEs or other patentees). They are by no mean exhaustive.

2 See in particular recitals 3, 8 and 10 of the Enforcement Directive. The policy objective of achieving a “high level of protection”, combined with a repeated reference to the fundamental right protection of intellectual property (under Art. 17(2) Charter of EU fundamental rights) in the recent case law of the Court of Justice of the EU (CJEU), has on the whole strengthened the substance and enforcement of intellectual property rights. For a review of this case law, see A. Strowel, ‘Article 17 – La propriété intellectuelle’ in F. Picod and S. Van Drooghenbroeck (eds), *Charte des droits fondamentaux de l’Union européenne. Commentaire article par article* (2nd ed. Larcier, 2019) 429.

3 R.M. Hilty, ‘The role of enforcement in delineating the scope of IP rights’ (2015) Max Planck Institute for Innovation and Competition Research Paper No. 15-03 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2602221> accessed 27 Jan. 2020. X. Seuba, *The Global Regime for the Enforcement of Intellectual Property Rights* (CUP 2017). D. Krauspenhaar, *Liability Rules in Patent Law – A Legal and Economic Analysis*, (Springer 2015).

4 E.g. B. Love, ‘Bad Actors and the Evolution of Patent Law’ (2015) 101 *Va. L. Rev.* 1.

5 M.A. Lemley and R.C. Feldman, ‘Is Patent Enforcement Efficient?’ (2018), 98 *B. U. L. Rev.* 649. R.C. Feldman and M.A. Lemley, ‘The Sound and Fury of Patent Activity’ (2018) Olin Stanford Working Paper Series No. 521 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3195988> accessed 27 Jan. 2020. D.L. Schwartz and J.P. Kesan, ‘Analyzing the role of non-practicing entities in the patent system’ (2014) 99 *Cornell L. Rev.* 425. A. Hagi and D.B. Yoffie, ‘The New

Patent Intermediaries: Platforms, Defensive Aggregators and Super-Aggregators’ (2013) 27 *J. Econ. Persp.* 45. R.P. Merges, ‘The Trouble with Trolls: Innovation, Rent-Seeking, and Patent Law Reform’ (2009) 24 *Berkeley Tech. LJ* 1583.

6 N. Thumm and G. Gabison (eds), ‘Patent Assertion Entities in Europe: Their impact on innovation and knowledge transfer in ICT markets’ (2016) JRC Report <<https://ec.europa.eu/digital-single-market/en/news/study-patent-assertion-entities-europe>>, accessed 27 Jan. 2020. Darts-IP Report. ‘NPE Litigation in the European Union: Facts and Figures’ (Feb. 19, 2018) <<https://www.darts-ip.com/npe-litigation-in-the-european-union-facts-and-figures-2/>>, accessed 27 Jan. 2020.

However, we focus on PAEs as these right holders have been considered more prone to adopt over-enforcement strategies. The case of PAEs therefore represents a critical case of abuse that could be tested vis-à-vis other types of patent holders. The last part of this paper concentrates on two closely interrelated mechanisms which could infuse more flexibility in patent litigation, i.e. the principle of the prohibition of abuse of rights and the principle of proportionality. We argue that those principles, when properly implemented, may mitigate some of the risks associated with over-enforcement practices.

B. Role and scope of the Enforcement Directive and the evolution of patent litigation

I. Origin and justification of the Directive

5 The initiative of the Commission to table in 2003 a proposal on measures and procedures to ensure the enforcement of IP rights⁷ was preceded by a long consultation process and a debate initiated by the October 1998 *Green paper on the fight against counterfeiting and piracy in the Single Market*⁸. Additional studies and a lobbying campaign in the early 2000s by the copyright industries, in particular the music, film, publishing and computer games sectors, and supported by the trade associations representing trademark owners, prompted the Commission to table its 2003 draft directive. The focus, as clearly exposed in the Explanatory Memorandum, was to fight piracy and counterfeiting⁹. According to recital

9 of the draft directive, “increasing use of the Internet enables pirated products to be distributed instantly” and “infringements appear to be increasingly linked to organised crime.” Commentators took notice that the fight against piracy and counterfeiting was the main driver of the draft directive, some of them later complained that the Enforcement Directive was “too much designed from this perspective”¹⁰.

6 Although it targeted piracy and counterfeiting, the scope of the directive was couched in more general terms as it was initially confined to “infringements carried out for commercial purposes or causing significant harm to the right holder” (Art. 2 of the draft directive). The interested parties strongly opposed this delimitation of the directive’s scope. The copyright industries were afraid that some types of piracy activities could not be covered such as the massive online sharing of copyright files by Internet users¹¹ while the European Brands Association criticized the absence of definition of piracy and counterfeiting, and suggested to use the TRIPS-based definition of counterfeited and pirated goods that was incorporated in the draft Customs Regulation¹², whose aim was to facilitate

and this means that the counterfeited and pirated products are more likely to be manufactured and sold in those countries which are less effective than others in combating counterfeiting and piracy. They therefore have direct repercussions on trade between the Member States and a direct impact on the conditions governing competition in the Internal Market.”

7 The proposal was adopted by the Commission on 30/1/2003 (COM(2003) 46(1)). The text, including the explanatory memorandum, are available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2003:0046:FIN> accessed 30 July 2019.

8 COM(98) 569 final.

9 The first paragraph of the Explanatory Memorandum highlighting the objective of the initiative refers several times to counterfeiting and piracy: “Counterfeiting and piracy, and infringements of intellectual property in general, are a constantly growing phenomenon which nowadays have an international dimension, since they are a serious threat to national economies and governments. In the European Internal Market, this phenomenon takes particular advantage of the national disparities in the means of enforcing intellectual property rights. These disparities seem to influence the choice of where counterfeiting and piracy activities within the Community are carried out,

10 E. Valgaeren and L. De Gryse, ‘Een Europese Richtlijn betreffende de handhaving van intellectuele eigendomsrechten’ (2005) SEW, issue 5, 202 (translation from Dutch: “(...) de strijd tegen de ‘piraterij’ blijkbaar de belangrijke drijfveer was voor de ontwerpers van de Richtlijn. Dit voedt ook het vermoeden dat de Richtlijn al te zeer vanuit die optiek is opgesteld”). See also, J.L. Huydecoper, ‘Nous maintiendrons – de nieuwe ‘Richtlijnhandhaving’ (2004) 4 AMI – Tijdschrift voor auteurs-, media- & informatierecht 202. Ch. H. Massa and A. Strowel, ‘The Scope of the proposed IP Enforcement Directive: torn between the desire to harmonise remedies and the need to combat piracy’ (2004) 26(2) EIPR 244.

11 See Position of the Anti-Piracy Coalition on the proposed Enforcement Directive, 2 Sept. 2003 (Unpublished). This coalition comprised among others the Business Software Alliance (BSA), the European Film Companies Alliance (EFCA), the Federation of European Publishers (FEP), the International Association of Film Producers Associations (FIAPF), the International Federation of the Phonographic Industry (IFPI), the Interactive Software Federation of Europe (ISFE), the Motion Picture Association (MPA).

12 COM(2013) 20 final.

border measures against those goods.¹³ Although the language on the directive's scope disappeared during the legislative process, no agreement could be reached on a definition of piracy and counterfeiting. At the end, the scope of the Enforcement Directive was extended to "any infringement" of IP rights as provided by EU law and/or by national law (art. 2(1)). The declared aim of the directive to combat piracy and counterfeiting seemed somewhat incompatible with such extended scope of application comprising any infringement of economic relevance.¹⁴

- 7 The objective of harmonization between Member States was another reason put forward for this directive, and the Commission emphasized this dimension to justify its initiative¹⁵. The need for a quick harmonization of enforcement measures¹⁶ at a TRIPs-plus level was considered crucial in the light of the then forthcoming accession of 10 new Member States on May 1st, 2004 (just a few days after the final adoption of the Enforcement Directive) and the perceived threat that piracy would be imported from those Eastern and Central European countries.
- 8 The justifications at the origin of the Enforcement Directive reveal that patent enforcement was never the focus of the legislative discussions. At the time, some industries, companies or even Member States already feared that the extension of the Directive

13 AIM (Association des Industries de Marque-European Brands Association) Position Paper – Comments on the draft directive on measures and procedures to ensure the enforcement of IP rights, 2003 (Unpublished). EFPIA (the European Federation of Pharmaceutical Industries and Associations) understood that the draft directive could help to fight the growing problem of counterfeiting of pharmaceuticals, and insisted that "it is essential that any counterfeiting should come under the Directive whatever its scale or purpose, as provided in TRIPs". Comments of EFPIA, Proposal for a directive on measures and procedures to ensure the enforcement of IP rights, 4 June 2003. (Unpublished).

14 A. Kur, 'The Enforcement Directive – Rough Start, Happy Landing?' (2004) 35(7) IIC 821, 822.

15 See for example the presentation of the Enforcement Directive by one of the Commission's civil servants who has been in charge of the directive: D. Ellard, 'The EU's IPR Enforcement Directive. Origin, key provisions and future of the EU's IPR Enforcement Directive' (2004) CRI, issue 3, 65.

16 The legislative process for adopting the Enforcement Directive took only just over 15 months after the Commission's original proposal, which is rather fast. The prospect that, after the enlargement, the at that time 14 Member States would have to negotiate with the 10 new Member States was obviously a motivation for accelerating the political process.

to patent would generate problems¹⁷. The main concern in relation to patent enforcement was the provision on criminal sanctions for IP infringement (art. 17 of the draft directive). Despite the fact that this provision was left out at the end of the legislative process, the Enforcement Directive has kept several provisions directly linked to the piracy context. For example, article 10 of the Directive deals with corrective measures, including the destruction, recall and removal of infringing goods from the channels of commerce (the draft Directive even referred to the possibility to close down an infringer's business on a provisional or permanent basis). These measures are essential in the case of pirated and counterfeited goods¹⁸, but they might be implemented in a disproportionate manner in other infringement contexts, for instance in patent cases between *bona fide* businesses or in parallel trade cases involving authentic, but infringing goods.¹⁹

- 9 For other measures considered in the Directive, in particular for injunctive relief, our view is that the focus on piracy, counterfeiting and more generally on wilful and intentional infringements, has prevented the legislator to go into the details of how the proportionality requirement should be articulated and deployed. There is only a reference to the need of proportionate measures in Article 3 of the Directive, but nothing is said on how this should be implemented. For instance, through a balancing test whose main factors and terms would be defined in legislation and probably distinguished depending on the context and the intellectual property right involved.

We think in particular that the balancing test for granting an injunction in a patent infringement case must take other considerations on board than the test for granting an injunction in a copyright infringement case. For the simple reason that the assessment of a copyright infringement requires

17 This is for instance illustrated by the fact that 6 countries (the Netherlands, Austria, Portugal, Denmark, the UK and Ireland) had reservations until December 2003 on the inclusion of "patents, including supplementary protection certificates" in the list of IP rights covered by the Directive. See Council of the EU, Working Document of the Presidency, File 2003/0024(COD), 16289/03 of 19 Dec. 2003, 2.

18 The wording used in this provision is also closely related to the Regulation concerning customs enforcement of IPRs which scope of application relates directly to counterfeiting and piracy. Regulation (EU) 608/2013 of the European Parliament and of the Council of 12 June 2013 concerning customs enforcement of intellectual property rights and repealing Council Regulation (EC) No 1383/2003 (Customs Regulation).

19 Kur, (n 14) 826.

to prove that the defendant copied the protected work (or that s/he had access to the work, as a presumption for copying), while proof of copying is not required for patent infringement.

Thus a creator that independently develops a work that is substantially similar to a previous work will not infringe the copyright on the previous work, while an inventor who independently comes with the same technical solution as the one covered by a patent can be prohibited to use and market his/her solution. For this reason, the open source software community is critical of patenting software (as two independent developers might inadvertently come with the same technical solution). *Bona fide* businesses can be enjoined to stop selling their goods or offering their services (and subject to additional corrective measures) although they never had any knowledge that their business would encroach on some existing patent.

In the end, the Enforcement Directive is “torn between the desire to harmonize remedies and the need to combat piracy”²⁰. The specific focus on piracy and counterfeiting, and its potential unfitness in the patent enforcement context, requires that the provisions of the Directive be read with some cautiousness, in particular when they apply outside the piracy and counterfeiting context. Beyond this, it appears important to go further than the horizontal approach of the Directive and to design balancing tests that take into account the specificities of the different intellectual property rights.

II. Concerns expressed during the evaluation of the Enforcement Directive

- 10 In 2016, the European Commission conducted an evaluation of the Enforcement Directive.²¹ Respondents to the public consultation²² pointed at several stumbling blocks to an optimal enforcement

20 This formula was in the title of an article that one of the authors of the present contribution co-authored and published in EIPR. Voy. Massa and Strowel, (n 10) 244.

21 Commission, ‘Enforcement of intellectual property rights’ <https://ec.europa.eu/growth/industry/intellectual-property/enforcement_en> accessed 6 Aug. 2019.

22 Commission, ‘Summary of responses to the public consultation on the evaluation and modernization of the legal framework for IPR enforcement’ (April 14, 2016) <https://ec.europa.eu/growth/content/have-your-say-enforcement-intellectual-property-rights-0_en> accessed 6 Aug. 2019.

system. Notably, concerns were expressed regarding the lack of substantive law, lack of predictability, and the presence of broad and vague legal principles in the enforcement of patents. It was also contended that the provisions relating to the remedies available for right holders (in particular articles 9, 11, and 12 IPRED) might have to be reconsidered to clarify the applicability to these provisions of the general requirements of fairness, equity and proportionality envisaged in article 3 IPRED.

- 11 Following the public consultation of 2016, a ‘Support Study for the ex-post evaluation and ex-ante impact analysis of the IPR Enforcement Directive (IPRED)’²³ was issued. Four essential points have been made in the study. First, it was observed that to provide right holders with particularly strong enforcement tools might be detrimental to defendants if the latter do not benefit from sensible measures to counter infringement claims. In particular when the underlying IP right might not be valid.

Second, the study emphasised that the question of balance and adequacy was of paramount importance in the design of IP enforcement legislation.

Third, the authors noted that there were growing concerns from legal academics, the judiciary, but also SMEs involved in litigation, regarding the effectiveness with which the Enforcement Directive was striking the right balance between plaintiff and defendant rights.

Finally, it was concluded that there was sufficient evidence indicating a need to further investigate the tools and remedies on the defendant side to assess whether there was a need to re-balance the system of adjudication. A particular issue in this context was the topic of patent trolls which may engage in abusive exercises of patent rights and which could develop to sizeable magnitude if enforcement tools happen to be too strong.

- 12 In November 2017, the Commission published its guidance paper *on certain aspects of Directive 2004/48/EC on the Enforcement of IPRs* and a communication *on a balanced IP enforcement system responding to today’s societal changes*.²⁴ The communication specifically

23 Commission, ‘Support Study for the ex-post evaluation and ex-ante impact analysis of the IPR enforcement Directive (IPRED). Final Report’ (2017) <<https://publications.europa.eu/en/publication-detail/-/publication/1e3b2f41-d4ba-11e7-a5b9-01aa75ed71a1>> accessed 7 Aug. 2019.

24 Commission, ‘Guidance on certain aspects of Directive 2004/48/EC of the European Parliament and of the Council on the enforcement of IPRs’ (Communication) COM (2017) 708 final. Commission, ‘A balanced IP enforcement system responding to today’s societal challenges’ (Communication)

stated that it aimed to ensure a balanced approach to IPR enforcement *and* to prevent abuse of measures, procedures and remedies set out in the Directive. The Commission re-affirmed that the general principles of proportionality, fairness and equity should govern the enforcement framework of IPRs. This included striking an appropriate balance between the different parties involved and not favour the position of right holders.²⁵

The guidance paper of the Commission may be fairly general in its conclusion. However, as suggested in the support study, further investigation regarding the tools and remedies on the defendant side remains necessary to assess whether there is a need to re-balance the EU enforcement framework under IPRED. This paper, without being exhaustive in such investigation, notably aims at providing more information on these tools and remedies, and could serve as a basis for bringing further guidance to the concerned parties.

III. Evolving patent litigation strategies in the new environment

- 13 The adequacy of the Enforcement Directive in the field of patent litigation is even more questionable when we consider various changes in the market and legal environments that have happened since 2004. Smartphones did not exist back then and other complex products integrating many IT components were not commonly marketed. Today, many products such as smart watches, tablets or other wearables, smart TVs, intelligent thermostats and other connected products belonging to the Internet of Things (IoT) integrate multiple pieces of hardware and software (not to speak of the “smartphones on wheels”: the connected and ever more autonomous vehicles). In an environment characterized by the increased use of information and communication technology, the risks of infringing a patent on one small component²⁶ have increased alongside the

COM (2017) 707 final.

- 25 In its communication, the Commission makes clear that article 17 of the European Charter of Fundamental Rights implies a “full respect of IP” and that the rules of the directive must be interpreted and applied in a manner to safeguard this fundamental right. It also makes clear that if measures, procedures and remedies may be abused and that safeguards should be put in place in order to limit these abuses, the safeguards should not be so strong as to deter legitimate right holders from enforcing their rights.
- 26 On the issue of complex products see: B. Biddle et al. (eds), *Patent Remedies and Complex Products: Toward a Global Consensus* (CUP 2019). In particular, the case cited p. 252 and

level of globalisation in the production lines, the increased outsourcing and the longer supply chains.

- 14 Those new market conditions have prompted new strategies by companies as well as the arrival of new sophisticated and strategic actors. In the US, the total number of patent applications has grown from 382,139 in 2004 to 629,647 in 2014.²⁷ In Europe, the number of patent applications has not grown as fast over the decade 2009-2018 (from 134,511 to 174,317), but the number of patents granted per year has more than doubled (from 51,952 in 2009 to 127,623 in 2018).²⁸

Between 2014 and 2016, the rate of growth of patent applications for technologies related to the fourth industrial revolution was of 54 %.²⁹ In parallel to the increase in patent activity, new strategies to extract value from the patent portfolios have developed with the appearance of NPEs and PAEs which were not as numerous and visible back in the early 2000s.³⁰ The often aggressive practices of those new actors in enforcing their patents, whether in the US or in Europe, is amply attested by several studies.³¹

the recommendations pp. 263-267.

- 27 See the U.S. Patent Statistics Chart (1963-2015), <https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm> accessed 19 Oct. 2019.
- 28 See the EPO statistics (2009-2018), <<https://www.epo.org/about-us/annual-reports-statistics/statistics.html#applications>> accessed 19 Oct. 2019.
- 29 European Patent Office, ‘Patents and the Fourth Industrial Revolution. The inventions behind digital transformation’ (2017), <<https://www.epo.org/news-issues/news/2017/20171211.html>> accessed 21 Oct. 2019.
- 30 On the NPE timeline, see e.g.: E. Lee, ‘Patent Trolls: Moral Panics, Motions in Limine, and Patent Reform’ (2015) 19 *Stanford Tech. L. Rev.* 113. S. Fusco, ‘Markets and Patents Enforcement: A Comparative Investigation of Non-Practicing Entities in the U.S. and Europe’ (2014) 20 *Mich. Telecomm. & Tech. L. Rev.* 439.
- 31 E.g.: B. Love et al., ‘Patent Assertion Entities in Europe’ in D. Sokol (ed), *Patent Assertion Entities and Competition Policy*, (CUP 2017). G. Gabison, ‘Lessons that Europe can learn from the US Patent Assertion Entity Phenomenon’ (2015) 24 *Info. & Comm. Tech. L.* 278, 299.

- 15 A third important factor likely to affect the strategies of the PAEs in the future is the not yet into force UPC system.³² Its rules, such as the bifurcation principle borrowed from the law in Germany (where PAEs already concentrate their actions), have the potential to increase the leveraging power associated with the holding of patents: with the risk of a pan-European injunction, many companies might be induced or even forced to pay for a license fee even if the value of the claimed patent is dubious.³³
- 16 In conclusion, it is clear that the new risks of patent hold-up due to the increasing incorporation of many ICT elements in the more and more complex products, the inflation in the number of patents applied for and granted (without a guarantee of their quality) and the strategies of using the available enforcement tools as a pressure for extracting fees, are several outside factors that reinforce the need for a re-balanced system of enforcing patents in the EU.

C. Case study on PAEs and the risks of over-enforcement

- 17 The topic of PAEs in Europe has seen an increased interest by the European Commission³⁴, the EPO³⁵

industry³⁶ as well as academics³⁷. One of the main criticisms vis-à-vis the strategies adopted by PAEs in Europe, is that they can (too) easily rely on the threat of injunction. Regarding preliminary injunctions, national courts in Europe have certain discretionary powers to consider the potential impact that such interim relief may have on both parties before granting it.

The possibility to rely on the discretion of the courts and on a general principle of proportionality is said to limit the credibility of the threats of PAEs in preliminary procedures.³⁸ On the merits, however, most European courts follow the rule according to which findings of infringement will lead to the grant of an injunction.

Therefore, permanent injunctions are granted on a quasi-automatic basis. Only exceptional circumstances, generally interpreted strictly, justify that courts deviate from this principle.

32 C. Pentheroudakis and N. Thumm (eds), 'Innovation in the European Digital Single Market: The Role of Patents' (2015) JRC Report. Thematic Report on the Brussels Conference, 53.

33 See references below. On bifurcation see: C. Chien, C. Helmers, and A. Spigarelli, 'Inter Partes Review and the Design of Post-Grant Patent Reviews' (2019) 33 Berkeley Tech. LJ 817.

34 M. de Heide et al., 'Study on the changing role of intellectual Property in the semiconductor industry - including non-practicing entities' (2015) Final Report for the European Commission, DG Communications Networks, Content & Technology < <https://ec.europa.eu/digital-single-market/en/news/study-changing-role-intellectual-property-semiconductor-industry-including-non-practicing-0>> accessed 27 Jan. 2020. Thumm and Gabison, n 6.

35 Report from Europe Economics for the EPO, 'Economic Analysis of the Unitary Patent and the Unified Patent Court' (2014)<<https://www.epo.org/about-us/services-and-activities/chief-economist/studies.html>> accessed 6 Aug. 2019; ESAB Report for the EPO, 'Workshops on the unitary patent and the Unified Patent Court' (2013) <<https://www.epo.org/news-issues/news/2014/20140430.html>> accessed 6 Aug. 2019.

36 IP2Innovate, 'Supporting Innovation in Europe Through a Balanced Patent System: A Paper Responding to the European Commission's IP Package' (2018) <<http://www.ip2innovate.eu>> accessed 6 Aug. 2019. IP2Innovate, 'IP2Innovate calls for UPC judges to receive training to counter abusive patent litigation tactics' (2017) <<http://www.ip2innovate.eu/advocacy/>> accessed 6 Aug. 2019. The Financial Time, 'Apple, Microsoft and BMW urge EU to stop patent trolls' (15 Jan. 2020) <<https://www.ft.com/content/26230960-37a7-11ea-a6d3-9a26f8c3cba4>> accessed 28 Jan. 2020. The Financial Time, 'Letter: The patent troll myth has little basis in fact' (20 Jan. 2020) <<https://www.ft.com/content/e8eb0cac-3894-11ea-a6d3-9a26f8c3cba4>> accessed 28 Jan. 2020.

37 See e.g.: Love et al., n. 31. N. Thumm, 'The good, the bad and the ugly - the future of patent assertion entities in Europe' (2018) 30 Tech. An. & Strat. Mngmnt. 1046. J. Contreras and P. Picht, 'Patent Assertion Entities and Legal Exceptionalism in Europe and the United States, a Comparative View' (2017) Max Planck Institute for Innovation & Competition Research Paper No. 17-11 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3036578> accessed 27 Jan. 2020. K. Larson, *The Exploitation and Enforcement of Patents by Non-practicing Entities: Practices, Developments, and Future Challenges* (2017) (Haken School of Economics, Economics and Society) <<https://helda.helsinki.fi/dhanken/handle/123456789/168689>> accessed 27 Jan. 2020. C. Helmers and L. McDonagh, 'Trolls at the High Court?' (2012) LSE Law, Society and Economy Working Paper No. 13/2012 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2154958> accessed 27 Jan. 2020.

38 Thumm and Gabison, (n. 6), 40-41. Gabison, n. 31, 296.

I. Case law analysis – Mechanisms currently in place and further risks

18 We studied a sample of decisions (102 in total)³⁹ from jurisdictions of selected European Member States (i.e. Belgium, France, Germany, the Netherlands, and the UK) which involved at least one litigant qualified as an NPE and/or a PAE in literature⁴⁰. Since the identification of these instances relied on the identity of litigants, not all are either infringement actions or revocation actions, some mainly revolve around preliminary and/or evidentiary measures such as seizure measures and/or border measures. Some instances also concern unfair commercial

practices related to the threat of litigation, contractual issues, or the recovery of costs. This set of cases is necessarily restricted since, by relying on the identification previously made in literature, instances involving an un-identified NPE/PAE have not been under our radar. The complex structure of certain PAEs (i.e. those who own multiple subsidiaries or affiliated companies) also renders the analysis particularly complicated.

19 Undeniably, the study conducted here is not intended to provide an exhaustive list of cases or to provide an overview of all possible means by which PAEs can (and have) exercise their rights in an abusive way. The purpose of this research was to identify the mechanisms used by national courts to reduce (or prevent) potentially excessive or abusive behaviours of PAEs. We also compared the different approaches that courts from different jurisdictions have adopted vis-à-vis PAEs. The method adopted for this study is therefore fundamentally qualitative and not quantitative. We suggest that quantitative studies be developed in Europe with regard to the phenomenon of PAEs.

20 As mentioned in the introduction, litigated cases do not represent the full extent of the activities of PAEs. Some of the practices adopted by these entities take place in the shadow of litigation and the latter is sometimes considered as being only the “tip of the iceberg”⁴¹. Patent litigation data only provides partial information on PAEs activities, i.e. the visible part of their activities.⁴² For example, information regarding settlements is necessarily absent from the case law. Since some PAEs rather settle quickly and for a lower price than the estimated cost of litigation⁴³ (thereby engaging in “nuisance value settlements”⁴⁴) the information relative to these settlements could not be found during the search

39 Most cases come from the Darts-IP database, others have been provided by IP2 Innovate. Three sources have been relied upon in order to identify NPEs/PAEs active in Europe. First, the “Stanford NPE Litigation Dataset and Taxonomy” has been used as it provides the largest dataset of patent asserters as well as the most comprehensive categorization of NPEs to date. At the time of writing, only 20% of the dataset had been made available (i.e. 10.821 cases between 2000 and 2015). The NPEs/PAEs identified in the Stanford dataset have then been searched for on the Darts-IP database in order to uncover instances in which they may have been involved in Europe. Only a fraction of NPEs/PAEs active in the US, and included in the 20% of the Stanford dataset, have been found on the Darts-IP database. Second, a list of NPEs/PAEs active before national European courts and identified in the work of Contreras et al. (2018), Love et al. (2017), Helmers and McDonagh (2012), Pohlman and Opitz (2010), the JRC Report (2016), the Darts-IP Report (2018), as well as the instances provided by IP2Innovate has been drawn (see full references infra). Finally, publicly available information has been used to complete the set of entities studied. With regard to the list of NPEs/PAEs active in Europe and identified in the literature (i.e. the second source mentioned), not all entities have been found to be engaged in patent litigation. For example, in the JRC Report, defensive aggregators have naturally been identified as NPEs. However, it is generally not in their business model to litigate. Concerning entities which have been found to litigate (e.g. in Helmers and McDonagh (2012)) not all instances listed were available on Darts-IP. This is due to the fact that some of the cases studied in the literature have been physically collected at the premises of courts and are not included in the online database.

40 Thumm and Gabison, n. 6. Darts-IP Report, (n 6); Love et al., (n. 31); Helmers and McDonagh, (n 37); S.P. Miller et al., ‘Who’s Suing Us? Decoding Patent Plaintiffs since 2000 with the Stanford NPE Litigation Dataset’ (2018) 21 Stan. Tech. L. Rev. 235. J. Contreras et al., ‘Litigation of Standards-Essential Patents in Europe: A Comparative Analysis’ (2018) 32(5) Berkeley Tech. LJ 1457. T. Pohlmann and M. Opitz, ‘The Patent Troll Business: An Efficient model to enforce IPR? A typology of patent trolls, using empirical evidence from German case studies’ (2010) MPRA Paper No. 27342.

41 M.A. Lemley, K. Richardson and E. Oliver, ‘The Patent Enforcement Iceberg’ (2017) Stanford Public Law Working Paper <<https://ssrn.com/abstract=3087573>> accessed 26 Aug. 2019.

42 Gabison, (n 31) 288. Lemley et al., (n 41).

43 US FTC, ‘Patent Assertion Entity Activity: An FTC Study’ (2016) 20. <<https://www.ftc.gov/reports/patent-assertion-entity-activity-ftc-study>> accessed 26 Aug. 2019. B. Love, ‘Informational Hearing on Patent Assertion Entities’ (2013) <<https://digitalcommons.law.scu.edu/facpubs/808>> accessed 26 Aug. 2019. This is also supported by the Stanford Law School study on NPEs and PAEs as reported in Miller et al., (n 40).

44 P.R. Gugliuzza, ‘Regulating Patent Assertions’ (2016) B. U. L. Pub. L. Research Paper No. 16-36, 4 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2833548> accessed 27 Jan. 2020.

focusing on actual litigation. Finally, contrary to the US where information regarding litigated patents is more readily available, in Europe it is still difficult to depict a perfect picture of litigation. This is due to the fragmented system of litigation but also to the lack of transparency which makes it difficult to detect the scale of the problem. However, to study a set of cases in which PAEs have been involved is not a vain endeavour⁴⁵. This exercise provides relevant information on the strategies adopted by PAEs within the framework of patent litigation in Europe and helps in brushing a first picture of the current situation despite not being exhaustive or definitive. It also helps in understanding the role that the Enforcement Directive may play vis-à-vis new strategies in patent litigation.

- 21 Overall, the study revealed that national courts in Europe benefit and have resorted to a multitude of mechanisms in order to assess, and sometimes sanction, the (over-)enforcement practices of NPEs/PAEs. However, we argue that more reliance on flexible mechanisms would be beneficial for the overall patent litigation system, in particular with regard to injunctive relief.

II. Competition law and unfair competition

- 22 First and foremost, courts heavily rely on the rules of competition law to limit some over-enforcement practices by right holders.⁴⁶ This is particularly the case in the context of litigation involving standard essential patents (SEPs) but not exclusively. Arguably, the assessment framework elaborated by the Court of Justice of the European Union (CJEU) in *Huawei v. ZTE* (C-170/13)⁴⁷ has offered the most elaborate set of guiding principles to courts.
- 23 Defendants in infringement have argued that to engage in litigation, or to request specific measures, amounted to an abuse of dominant position and therefore should be considered an over-enforcement practice.⁴⁸ These claims have, nonetheless, not always

been successful since the conditions to demonstrate a violation of the rules of competition law are fairly strict. Moreover, in Germany, some transitional cases (i.e. instances which had been introduced before the decision of the CJEU in *Huawei v. ZTE* but which were resolved after this case) rendered the application of the framework established by the EU court particularly difficult. German courts have been more indulgent vis-à-vis right holders who may not have fully complied with this framework.⁴⁹

- 24 Additionally, the law of unfair competition or specific provisions under UK patent law⁵⁰ have also provided some comfort to litigants vis-à-vis the practice of right holders to send overly vague demand letters or to proceed with broad assertions of claims.⁵¹

III. Procedural rules

- 25 National courts have also been attentive to the fact that mandatory, and essentially procedural, requirements for the adjudication of patents were met. We refer here to the fact that an infringement action can only be brought by a plaintiff with proper standing to sue, derived from a valid patent in suit and against a proper defendant who is alleged to have infringed such patent.⁵²

In the UK: *SanDisk Corp. v. Philips et al. (including SISVEL)* [2007] EWHC 332 (Ch). In Germany: LG Dusseldorf 4b O 140/13 (26.03.15).

- 49 LG Dusseldorf 4b O 157/14 (19.01.16). LG Dusseldorf 4a O 73/14 (31.03.16) and OLG 15 U 36/16 (09.05.16).
- 50 Intellectual Property (Unjustified Threats) Act of 2017 <<http://www.legislation.gov.uk/ukpga/2017/14/contents/enacted>> accessed 6 Aug. 2019. See also an older decision in patent litigation: *Cintec International Ltd. v. John. H. Parkes (t/a Dell explosives) and Martin Frost* [2003] EWHC 2328 (Ch).
- 51 In France: CA Versailles (14^e ch.) 06 Nov. 2013, RG 12/08367 confirmed by C. Cass (Comm.) 27 Mai 2015, D14-10.800. A contrario: T. Comm Marseille, 20 Sept. 2016, RG 2016F01637. In the Netherlands: Rechtbank Den Haag, 10 Oct. 2007, KG ZA 07-1000.
- 52 In Germany: LG Dusseldorf 4a O 54/12 (11.12.12). In the UK: *Nokia OYJ v. ICom GmbH & Co. KG* [2011] EWHC 3460 (Pat). *Sandvik IP AB v. Kennametal UK Ltd., Kennametal Europe GmbH* [2011] EWHC 3311 (Pat). *Vringo Infrastructure Inc. v. ZTE (UK) Ltd.* [2014] EWHC 3924 (Pat). *SanDisk Corp. v. Philips et al. (including SISVEL)* [2007] EWHC 332 (Ch). *Rovi Solutions Corp. & United Video Properties, Inc. v. Virgin Media Ltd. et al.* [2015] EWHC 646 (Pat). In France: CA Paris (4^e ch. sct. A) 23 Oct. 2002, RG 1996/20620.

45 Gabison, (n 31) 94.

46 In Germany: LG Dusseldorf 4b O 274/10 (24.04.12). LG Dusseldorf 4a O 54/12 (11.12.12). In the UK: *Unwired Planet International Ltd. v. Huawei & Samsung* [2017] EWHC 711 (Pat). *SanDisk Corp. v. Philips et al. (including SISVEL)* [2007] EWHC 332 (Ch). *Vringo Infrastructure Inc. v. ZTE (UK) Ltd.* [2014] EWHC 3924 (Pat).

47 Case C-170/13, *Huawei Technologies Co. Ltd. v. ZTE Corp. and ZTE Deutschland GmbH*. ECLI:EU:C:2015:477.

48 In France: TGI Paris (3^e ch. 2^e sct.) 17 Avril 2015, RG 14/14124.

For example, French courts have held that, where an NPE/PAE had not registered a transfer of rights before asserting its patents, such asserter lacked proper standing to sue.⁵³

- 26 Other procedural requirements have been relied upon to limit the enforcement practices of right holders. For example, where a right holder's situation did not meet the condition of urgency or timeliness to obtain a preliminary injunction.⁵⁴ In one German case, the Dusseldorf Regional Court⁵⁵ also considered that the right holder had been "hesitant and negligent" in bringing his action before denying the grant of a preliminary injunction. German courts have nonetheless clearly specified that right holders are under no duty to monitor the market. However, they have indicated that, in the event right holders have tangible indications of infringement by a third party, they should act promptly if they wish to obtain a preliminary injunction.⁵⁶

53 TGI Paris (3^e ch. 1^e sct.) 22 Nov. 2000, RG 00/0254, confirmed on appeal by CA Paris (4^e ch. sct. A) 29 Mai 2005, RG 2001/05850. CA Paris, 5-1, 25 Nov. 2009, RG 08/07235. CA Paris, 1-3, 28 Jan. 2014, RG 13/08128. TGI Paris (3^e ch. 3^e sct.) 10 Mars 2017, RG 14/16022.

54 In Germany: OLG Berlin 5 U 149/14 (20.02.15). In the Netherlands: Rechtbank Den Haag, 06 Jan. 2017, KG ZA 16-906. Although ultimately rejected. The court observed that, under certain circumstances, the inaction of the plaintiff can result in the fact that there is no more urgency. This would notably be the case if the inaction last for a long period and where no new set of facts or circumstances could justify delaying the introduction of the proceedings. This was also evoked, but ultimately rejected, in Rechtbank's-Gravenhage, 26 Mei 2009, KG-ZA 09-157.

55 LG Dusseldorf 4b O 16/16 (24.05.16).

56 OLG Berlin 5 U 149/14 (20.02.15). OLG Dusseldorf I-2 U 23/17 (18.07.17). In the first instance mentioned here, the OLG Berlin observed that: "The [] behaviour outlined by the claimant may be perfectly understandable from an economic point of view, but at the same time also testifies to an objectively missing special interest in wanting to pursue claims for injunctive relief, especially in an urgent procedure" (at 13). In this instance, the court noted that the plaintiff let the defendant engage in sales for more than 1 year after a public fair and on the whole territory of the German market. The plaintiff "closed its eyes" for a remarkably long time while systematically locating and suing other infringers.

IV. Proportionality, unreasonableness, abuse and bad faith

1. Measures other than permanent injunctions

- 27 Some national courts have made use of the room of manoeuvre left in national patent laws, or have called upon their discretionary powers, to refuse to grant "unreasonable" or "disproportionate" measures requested from right holders. This was particularly the case for UK and French courts. Such denial from courts overwhelmingly concerned evidentiary measures (i.e. seizure measures or search orders), recall and destruction orders, publication orders, and to a certain extent, preliminary injunctions. In most instances involving this set of issues, courts have taken into account all the circumstances of a case and have engaged in a balancing exercise between the interests of the parties before granting these measures.⁵⁷ In Germany and, to a lesser extent, in the Netherlands⁵⁸, the interests of right holders have prevailed over those of the defendants. This, however, does not detract from the fact that, in this context which does not concern permanent injunctions, an exercise of proportionality has been conducted by these courts.

- 28 Defendants have also argued that to engage in litigation, or to request specific measures, violated the principle of the prohibition of abuse of rights or the principle of good faith.

57 In Germany: LG Dusseldorf 4b O 157/14 (19.01.16). In the UK: *Shire Pharmaceutical Contracts Ltd. v. Mount Sinai School of Medicine of New York University* [2011] EWHC 3492 (Pat). *IPCom GmbH & Co KG v. HTC Europe Co. Ltd. et al.* [2013] EWHC 52 (Pat). In France: TGI Paris (3^e ch. 3^e sct.) 08 Avril 2011, RG 11/02062. TGI Paris (3^e ch. 1^e sct.) 16 Avril 2015, RG 12/12329. TGI Paris (3^e ch. 3^e sct.) 15 Avril 2016, RG 15/01377. TGI Paris (ord. ref.) 28 Juin 2011, RG 11/55030. CA Paris, 1-3, 28 Jan. 2014, RG 13/08128, on appeal from TGI Paris (3^e ch. 3^e sct.) 29 Mars 2013, RG 12/16718.

58 Rechtbank Den Haag, 09 Nov. 2005, KG 05/1175. Court of Amsterdam, 12 Sept. 2008, KG ZA OS 1721 WT/MB. The court held that, in light of the overriding importance of Sisol's enforcement of its patents in the Netherlands, there was no reason to reduce the measure as requested by the defendant. The defendant essentially argued that to grant a seizure measure and to allow this measure to be enforced during a public fair was disproportionate as a descriptive seizure would have been sufficient for the purpose of enforcement. The defendant argued that the court should withdraw the measure before its enforcement.

These claims have rarely been successful due to the lack of proof of a specific intention to harm, a malicious intent or the bad faith of right holders.⁵⁹

2. Permanent injunctions

29 Overall, considerations of proportionality have only sporadically affected the grant of permanent injunctions. Findings of validity and infringement have been deemed necessary and sufficient conditions for their grant. It is only in cases where the grant of an injunction would be “grossly disproportionate” that some courts would refuse to grant such remedy. In instances where the grant as such may not have been considered grossly disproportionate, some UK courts have granted the remedy but engaged in a tailoring exercise. For example, they have granted a so-called FRAND injunction⁶⁰. They also have ordered temporary stay on enforcement of injunction when proportionality concerns combined with the public interest required them to do so. This tailoring of injunctive relief aimed at ensuring that the order fit the particular circumstances of a case.

30 A contrario, in Germany, courts have been clear that the principle of proportionality does not affect the grant of permanent injunctions. Findings of validity and infringement are the only required conditions. Moreover, due to the system of bifurcation⁶¹, a finding of infringement without a complete review of validity can support a grant of an injunction. In practice, permanent injunctions have been granted despite the fact that invalidity proceedings were on-going.⁶² To discuss the issue of the so-called

“injunction-gap”⁶³ would go beyond the scope of this paper. However, had German courts relied on the principle of proportionality before issuing an injunction (or stayed the enforcement of such injunction until a decision on validity), situations of patents which are found invalid but nonetheless infringed would potentially have been avoided. Additionally, it may be argued that the presence of such an “injunction-gap” works as a further threatening factor (together with the threat of injunctive relief) against alleged infringers which may drive to settlements and withdrawals of validity challenges, leaving disputed patents unreviewed.⁶⁴

31 German courts have adopted a particularly strong view on the fact that there can be little to no reason for treating NPEs or PAEs differently than other patent holders.⁶⁵ They also have been more reluctant

59 In France: TGI Paris (3^e ch. 2^e sct.) 17 Avril 2015, RG 14/14124. TGI Paris (3^e ch. 3^e sct.) 07 Juin 2013, RG 10/08326. TGI Paris (3^e ch. 3^e sct.) 10 Mars 2017, RG 14/16022. TGI Paris (3^e ch. 3^e sct.) 24 Mai 2013, RG 11/09609. In the UK: *Nokia Corporation v. Interdigital Technology Corp.* [2004] EWHC 2920 (Pat). In Germany: BGH, 10 May 2016, XZR 114/13. LG Dusseldorf 4b O 157/14 (19.01.16).

60 *Unwired Planet International Inc. v. Huawei Technologies Co Ltd.* [2017] EWHC 1304 (Pat). Confirmed on appeal *Unwired Planet v. Huawei Technologies* [2018] EWCA Civ 2344.

61 In Germany, claims of infringement and validity are decided by different courts. Regional courts and higher regional courts decide exclusively on infringement while the Federal Patent Court (*‘Bundespatentgericht’* – BPatG) decides exclusively on validity.

62 LG Dusseldorf 4a O 73/14 (31.03.16), OLG Dusseldorf 15 U 36/16 (09.05.16) and BPatG 6 Ni 6/16 (EP) (11.01.17): In this instance, an injunction was issued even though a challenge to the patent’s validity, brought by different parties in a separate legal action, was ongoing and ultimately successful.

LG Dusseldorf 4a O 114/13 (30.10.14) and BPatG 4 Ni 5/14 (EP) (21.07.15): In this instance, an injunction was issued even though a challenge to the patent’s validity was ongoing and ultimately successful. LG Mannheim 2 O 106/14 (27.11.15), OLG Karlsruhe 6 U 220/15 (27.04.16) and BPatG 4 Ni 6/15 (EP) (25.10.16). LG Munchen 7 O 16945/15 (21.04.16) and BPatG 2 Ni 21/16 (21.04.15): In this instance, an injunction was issued even though a challenge to the patent’s validity was ongoing. Ultimately, the patent infringement action as well as the patent validity challenge were withdrawn, and the case has been assumed to be settled.

63 This refers to a situation in which a court finds that there is an infringement and therefore issues an injunction despite the fact that invalidity proceedings are still pending before another court. On this topic see: Chien, Helmers, Spigarelli, n. 33. K. Cremers et al., ‘Invalid but infringed? An analysis of Germany’s bifurcated patent litigation system’ (2016) 31 J. Econ. Behav. Organ., Part A 218. M. Klos, ‘Nullity suits leave large wake at Federal Patent Court, Juve Patent’ (30 Aug. 2019) <<https://www.juve-patent.com/market-analysis-and-rankings/courts-and-patent-offices/nullity-suits-leave-large-wake-at-federal-patent-court/>> accessed 27 Jan. 2020.

64 This was arguably the case in LG Mannheim 2 O 106/14 (27.11.15) (on infringement) and BPatG 4 Ni 6/15 (EP) (25.10.16) (on validity). A patent infringement action was filed, shortly followed by an invalidity challenge. After findings of infringement and the issuance of an injunction, but before a decision of the BPatG, the case was withdrawn and the appeal hearing on infringement was scheduled but not registered.

65 LG Mannheim 7 O 94/08 (27.02.09). The fact that the right holder was exclusively exploiting patents through licensing activities was considered irrelevant regarding the right to obtain and enforce an injunction. To obtain and enforce such measure was considered permitted under patent law and did not amount to a misuse of a legal position. Neither were any constraints derived from a FRAND declaration and

than other European courts to deny or tailor injunctive relief in light of, e.g. the public interest or the fact that the infringing part constituted only a small component of a highly complex product.⁶⁶ If these elements have been considered to fall within the scope of a test of proportionality, the application of such test was so strict⁶⁷ that, *in fine*, it provided almost no room for manoeuvre (see *infra*, at D.II.4 a) Temporary stay). What German courts have nonetheless done on a larger scale than any other courts in the instances studied, was to grant injunctive relief on the condition that a security, in the form of a bank guarantee, was posted.⁶⁸

V. Conclusive remarks: Further risks and search for more flexibility

32 Despite the fact that courts were “hesitant to draw patent law or competition law consequences based

competition law. LG Dusseldorf 4a O 114/13 (30.10.14). The fact that a right holder’s only purpose was the acquisition, holding, and administration of patents, and that it had no market position to protect, did not affect the right to obtain injunctive relief.

66 In the case of complex products: OLG Karlsruhe 6 U 12/12 (07.08.13) overturned on appeal in BGH X ZR 114/13 (10.05.16). LG Munchen 7 O 16945/15 (21.04.16). With regard to the public interest: LG Dusseldorf 4a O 114/13 (30.10.14). LG Munchen 7 O 16945/15 (21.04.16).

67 For example, in one instance, an injunction and the recall of products was ordered despite the fact that the infringing part constituted only a small component of a highly complex product. The court was not influenced by the fact that the patent owner produced no product, sought only to collect royalties on a patent that would expire few months later, that the patent related to a single feature of a product containing thousands of them or that many products would have to be recalled from the market. The BGH held that a stay on enforcement of an injunction could only be granted if the patent in suit concerned “a small but essential component of a technically complex device and [could not] be replaced within a reasonable timeframe by an expired patent or licensable product” (Free translation). In the case at hand, the BGH held that, in light of this test, the measures were not disproportionate. BGH X ZR 114/13 (10.05.16).

68 LG Mannheim 7 O 98/16 (17.03.17). OLG Dusseldorf I-2 U 5/13 (19.01.17). OLG Munchen 6 U 2888/15 (02.06.16). LG Munchen 7 O 16945/15 (21.04.16). LG Dusseldorf 4b O 140/13 (26.03.15). LG Dusseldorf 4a O 54/12 (11.12.12). LG Dusseldorf 4b O 274/10 (24.04.12). LG Mannheim 7 O 20/11 (20.04.12). LG Mannheim 7 O 472/04 (20.01.12). LG Dusseldorf 4a O 139/10 (01.12.11). LG Dusseldorf 4b O 279/06 (31.07.07).

solely on the fact that a party is a PAE⁶⁹, they did provide some responses to over-enforcement practices as practices that could either be classified as anti-competitive or unlawful under other sets of legal rules. Nevertheless, some drawbacks have been identified which let us believe that more reliance on flexible mechanisms would be beneficial in the enforcement framework.

33 First, there are some disparities between national courts regarding the interpretation of the different provisions of the Enforcement Directive. This is particularly the case for the interpretation given by UK courts compared to the one provided by German courts. While UK courts are more ready to exercise their discretion in order to evaluate all the circumstances of a case before granting an injunction (or to tailor such grant), German courts regularly stand by the fact that they do not benefit from the same discretion.

As explained under point D of this contribution, it is generally argued that German courts neither benefit from discretionary powers nor engage in a proportionality test or a balancing exercise before granting permanent injunctions⁷⁰ (see *infra*, D.II.4.

69 Contreras and Picht, n. 37, 3. In the following instances, national courts paid attention to the form or business model adopted by the enforcer without necessarily drawing any conclusions from it. In the UK: *Affymetrix Inc., Affymetrix UK Ltd. v. Multilyte Ltd.* [2004] EWHC 291 (Pat). *Environmental Recycling Technologies Plc. v. Upcycle Holdings Ltd.* [2013] EWPC 4. *Nokia Corp. v. InterDigital Tech. Corp* [2006] EWCA Civ 1618. *Unwired Planet International Ltd. v. Huawei & Samsung* [2016] EWHC 958 (Pat). *Unwired Planet International Ltd. v. Huawei & Samsung* [2015] EWHC 2097 (Pat). *Sandisk Corp. v. Philips et al., including SISVEL* [2007] EWHC 332 (Ch). In France: TGI Paris (3^e ch. 2^e sct.) 17 Avril 2015, RG 14/14124. TGI Paris (3^e ch. 1^e sct.) 26 Mai 2016, RG 14/05090. T. Comm. Marseille, 20 Sept. 2016, RG 2016F01637. TGI Paris (3^e ch. 3^e sct.) 30 Oct. 2015, RG 13/06691. TGI Paris (3^e ch. 1^e sct.) 17 Mars 2016, RG 12/12329. TGI Paris (3^e ch. 3^e sct.) 10 Mars 2017, RG 14/16022. In Germany: LG Dusseldorf 4b O 140/13 (26.03.15). LG Dusseldorf 4b O 16/16 (24.05.16). LG Munchen 7 O 16945/15 (21.04.16). OLG Munchen 6 U 2888/15 (02.06.16). LG Mannheim 7 O 38/14 (26.02.16). OLG Karlsruhe 6 U 29/11 (18.04.11). LG Mannheim 7 O 20/11 (20.04.12). LG Mannheim 7 O 255/10 (17.06.11). OLG Mannheim 2 O 53/12 (28.02.14). In Belgium: HvB te Brussel (8^{ste} kamer) 03 Sept. 2002, *DSM N.V. et al. v. Rohme Enzyme GmbH et al.* (AR nr. 2000/AR/2557). In the Netherlands: Rechtbank den Haag, 24 Oct. 2014, KG ZA 14-870. Rechtbank den Haag, 6 Juli 2011, HA ZA 10-2069.

70 C. Rademacher, ‘Injunctive relief in patent cases in the US, Germany and Japan: Recent developments and outlook’ in T. Takenaka (ed), *Intellectual property in Common law and Civil law* (Edward Elgar 2013). U. Scharen, ‘The practice of claiming injunctive relief for patent infringement in Germany’ (2018) 14(2) JIPLP 112.

Abuse of rights and proportionality with regard to injunctive relief). In some decisions UK courts have supported that article 3 of the Enforcement Directive should be more relied upon in order to infuse flexibility in injunctive relief.⁷¹ This has generally been refused by German courts.⁷² The disparities in interpreting this article 3 and in applying its principles are particularly harmful and should therefore be reduced.

- 34 Second, the burden of proof which lied on defendants to demonstrate that a right holder engaged in over-enforcement is particularly burdensome. The focus on subjective elements, such as bad faith or intention to harm, as well as the general reluctance of certain courts to find that some prerogatives may be exercised abusively although patents may be found valid and/or infringed, is a serious hurdle for defendants. There might be over-enforcement practices which do not fall within the scope of a competition law defence or a bad faith defence, because they do not reach the level of harmfulness required, but which could nonetheless be subjected to a moderation test. For example, the approach adopted by certain courts, in particular in the UK, to assess unreasonableness in the exercise of patent prerogatives, a lack of proportionality, as well as acts of unfair competition (in France and Belgium), appear to provide some positive results in terms of limiting over-enforcement claims.
- 35 Third, one of the main concerns identified in the literature regarding the enforcement practices of PAEs was that PAEs can heavily rely on the threat of injunctive relief. To study this threat through a set of decisions is not an easy task. First, cases where PAEs capitalize on the threat of injunction and settle for a fee that is bearable by the defendant (and more attractive than the money, efforts and time spent in litigating) might be consequential but will not be discovered by the study undertaken here. Second, we should make a clearer distinction between different types of injunctions.

We believe that the possibility to get preliminary injunctions should be studied and factored in the analysis. The risks of such injunctions compared to permanent injunctions might as well have a

71 *HTC Corporation v. Nokia Corporation* [2013] EWHC 3778 (Pat) at 26-27. Justice Arnold observed that: “the time has come to recognize that, in cases concerning infringements of intellectual property rights, the criteria to be applied when deciding whether or not to grant an injunction are those laid down by Art. 3(2): efficacy, proportionality, dissuasiveness, the avoidance of creating barriers to legitimate trade and the provision of safeguards against abuse”.

72 LG Mannheim 7 O 182/08 (18.12.09). LG Dusseldorf 4b O 274/10 (24.04.12). BGH, 10 May 2016, XZR 114/13.

threatening effect, and lead to early settlements that remain confidential and thus unnoticed. Third, more in-depth analysis would be needed to assess the probability for a patent holder to obtain an injunction and, more importantly, the influence this probability and the perceived litigation risk have on the behaviour of the targeted companies. In light of the criticisms made by companies active in Europe and which have been approached or sued by PAEs, the problem appears more serious than what the sample of cases studied in this contribution indicates.

- 36 In the next part, we argue that more reliance on flexible mechanisms such as the principle of abuse or the principle of proportionality may mitigate some of the remaining risks associated with over-enforcement practices, in particular vis-à-vis permanent injunctions.

D. The principles of the prohibition of abuse of rights and of proportionality – how to better incorporate them in the patent enforcement framework

I. The principle of abuse of right: A principle common to many EU Member States

1. Definition

- 37 Numerous civil law countries have adopted or even incorporated in their legislation, a principle prohibiting abusive exercises of rights. Such principle is grounded on a variety of theories such as the notion of fault (e.g. in Belgium and France), good faith (e.g. in Germany) or reasonableness and fairness (e.g. in the Netherlands). It is accepted that whatever the foundation theory chosen, the abuse of rights theory is an “instrument allowing judges to find a remedy for an imbalanced situation and a tool for recovery of distorted exercises of a right”⁷³. Multiple criteria are relied upon by national judges in order to determine whether the exercise of a right of the right holder, or objective, i.e. they refer to the particular circumstances of a case without

73 V-L. Benabou, ‘L’abus de droit peut-il servir la cause de l’intérêt général en droit de la propriété intellectuelle’ in *L’intérêt général et l’accès à l’information en propriété intellectuelle* (Université Libre de Bruxelles, colloque des 21 et 22 Avril 2006, Bruylant 2008).

necessarily taking the intentions of the right holder into account. The most common criteria relied upon in civil law countries are: the fact that a right may be exercised with the intention to harm others (which bad faith), that such exercise may be considered disproportionate (which includes the exercise of rights with disregard for the interests of third parties or without legitimate interests) and that the exercise of rights contradicts the purpose or function for which they have been granted.

- 38 If the principle of the prohibition of abuse is particularly well-known in Belgium and France, the place and role of such principle in the German legal order is less straightforward. In Germany, the theory of abuse is considered to be a specific application of the general principle of good faith (*'Treu und Glauben'*) that originates in §242 of the *'Bürgerliches Gesetzbuch'* (the German civil code or BGB)⁷⁴. This general provision only provides guidelines to courts and there is a need for interpretation in light of the circumstances of each particular case in order to determine if the exercise of a right is contrary to the principle of good faith. It is nonetheless recognised that, if a right is exercised contrary to its objective, or in a disproportionate manner to the detriment of others, the exercise of that right may be reduced to its normal proportions on the basis of the limitative or corrective function (*'Korrektur des Gesetzesrechts'*) of good faith⁷⁵. The principle of good faith is also said to be broad enough to encompass cases where a right is exercised only for the purpose of harming others or cases where the right is being used against its rationale or its social function.⁷⁶

74 §242 BGB. Performance in good faith: An obligor has a duty to perform according to the requirements of good faith, taking customary practice into consideration <https://www.gesetze-im-internet.de/englisch_bgb/englisch_bgb.html#p0731> accessed 6 Aug. 2019.

75 A. Lenaerts, 'The relationship between the principles of *fraus omnia corrumpit* and the prohibition of abuse of rights in the case law of the European Court of Justice' (2011) 48 CMLR 1703. M. Taruffo, *Abuse of Procedural Rights: Comparative Standards of Procedural Fairness* (Kluwer Law International 1999). F. Ranieri, 'Bonne foi et exercice du droit dans la tradition du civil law' (1998) 50(4) RID Comp. 1055. R. Zimmermann and S. Whittaker, *Good Faith in European Contract Law* (CUP 2000).

76 Ranieri,(n 75).

2. The functions and sanctions of the principle of abuse

- 39 Similar to the limitative and corrective functions of good faith previously mentioned, the principle of the prohibition of abuse of rights also has an interpretative and a corrective function. Its interpretative function is closely connected to the fact that the exercise of a right may be considered abusive despite the fact that it complies with the right granted. The interpretative function allows to take some distance with the black letter law in order to ensure that the underlying objectives or purposes of a corpus of rules are respected. Additionally, the prohibition of abuse of rights also functions as a correction mechanism. It is there to redress deviant exercises of rights.
- 40 The sanction or correction stemming from findings of abuse is not the forfeiture of the right which has been abused. Rather, it is the exercise of this right which is limited to what is considered a proper use by a deciding authority. This tailoring of exercise may be accompanied by the allocation of damages⁷⁷ if a particular prejudice has to be repaired.

II. Abuse of rights, proportionality and the Enforcement Directive

1. Abuse of rights in the Enforcement Directive

- 41 The prohibition of abuse of rights is not limited to a specific field of law but, on the contrary, is to be considered "one of those pervasive legal concepts that is common to all disciplines"⁷⁸. It is, therefore, not necessary to have an explicit provision which would state that the abusive exercise of a right is prohibited.
- 42 Nevertheless, in the context of IP enforcement, it should be noted that a specific anti-abuse provision is included in the Enforcement Directive.⁷⁹Article 3(2)

77 S. Stijns, 'Abus, mais de quel(s) droit(s)?' (1990) JT n 5533, 33. P. Ancel, 'L'abus de droit en droit français et en droit belge' in E. Van Den Haute (ed), *Le droit des obligations dans les jurisprudences française et belge* (Bruxelles, Bruylant 2013) 99. P. Bazier, 'Abus de droit, rechtsverwerking et sanctions de l'abus de droit' (2012) 8 TBBR 393. F. Terré et al., *Droit civil. Les obligations* (12^e ed. Dalloz 2019) 1050.

78 R. Dussault, 'De l'abus des droits' (1961) 4(3) Les cahiers du droit 114.

79 A. Metzger, 'Abuse of Law in EU private law: A (re-) construction from fragments' in R. De La Feria and S.

provides that “measures, procedures and remedies shall also be effective, proportionate and dissuasive and shall be applied in such a manner as to avoid the creation of barriers to legitimate trade and to provide for safeguards against their abuse” (Emphasis added). This paragraph is generally applicable to all remedies and procedures in European IP law.⁸⁰ Next to article 3(2), article 8(2) and article 41(1) of the TRIPs Agreement postulate that safeguards against the abuse of IP rights, as well as abuse of procedures, shall be in place in order to ensure that the balance between the protection of IPRs and the interests of third parties is not wrongfully tilted in favour of one or the other.

- 43 Since the Enforcement Directive is an instrument of EU law, its provisions are subject to the interpretation and scrutiny of the CJEU. Therefore, hypothetically, guidance on the interpretation of article 3(2), and the meaning of abuse in the adjudication context, in particular, may be found in the case law of the Court. In practice, however, the case law of the Court is of little assistance in this matter. Most decisions referring to article 3(2) concentrate on the effectiveness and dissuasiveness⁸¹ of measures, procedures and remedies, while the other half of the sentence, i.e. that they should also be applied in a manner as to avoid the creation of barriers

Vogenaer (eds), *Prohibition of abuse of law, a new general principle of EU law?* (Hart Publishing 2011) 250-251.

- 80 Ibid, 243. European Observatory on Counterfeiting and Piracy. Injunctions in Intellectual Property Rights <<https://euipo.europa.eu/ohimportal/en/web/observatory/observatory-publications>> accessed 6 Aug. 2019.
- 81 On the principle of effectiveness, see: Opinion of Advocate General Szpunar, Case C-149/17, *Bastei Lübbe GmbH & Co. KG v. Michael Strotzer*, EU:C:2018:400. Case C-494/15, *Tommy Hilfiger Licensing LLC and Others v. DELTA CENTER a.s.*, EU:C:2016:528. Opinion of Advocate General Szpunar, Case C-223/15, *combit Software GmbH v. Commit Business Solutions Ltd.*, EU:C:2016:351. Opinion of Advocate General Wathelet, Case C-99/15, *Christian Liffers v. Producciones Mandarin SL, Mediaset España Comunicación SA, formerly Gestevisión Telecinco SA*, EU:C:2015:768. Opinion of Advocate General Villalón, Case C-580/13, *Coty Germany GmbH v. Stadtparkasse Magdeburg*, EU:C:2015:243. Opinion of Advocate General Villalón, Case C-314/12, *UPC Telekabel Wien GmbH v. Constantin Film Verleih GmbH and Wega Filmproduktionsgesellschaft GmbH*, EU:C:2013:781. Case C-180/11, *Bericap Záródástechnikai Bt. v. Plastinnova 2000 Kft*, EU:C:2012:717. Case C-324/09, *L'Oréal SA and Others v. eBay International AG and Others*, EU:C:2011:474. On the principle of dissuasiveness, see: Case C-57/15, *United Video Properties Inc. v. Telenet NV*, EU:C:2016:611, and the Opinion of Advocate General Sánchez-Bordona, EU:C:2016:201.

to legitimate trade and to provide for safeguards against their abuse, is almost absent from the case law of the Court.

- 44 In the landmark case *Huawei v. ZTE* (C-170/13), AG Wathelet⁸² evoked one possible meaning of abuse under article 3(2) of the Enforcement Directive. In his opinion (footnote 37) he noted that: “The concept of abuse is not defined in Directive 2004/48. I take the view, however, that that concept necessarily, *though not exclusively*, encompasses infringements of Articles 101 TFEU and 102 TFEU” (Emphasis added). If the AG recognised that the word abuse under article 3(2) encompasses anti-competitive behaviour, he also emphasised that abusive practices are not exclusively constitutive of abuses from the point of view of competition law. Therefore, alternative conceptions of abuse, next to anti-competitive practices, may be comprised under this provision. These alternative conceptions may include the principle of the prohibition of abuse of rights as previously presented.

2. Proportionality principle in the Enforcement Directive

- 45 With regards to the principle of proportionality, commentators have argued that national courts should rely more regularly on the principle of proportionality in order to limit the exercise of IP rights.⁸³ This approach directly comes from the interpretation to be given to article 3(2) IPRED. Much ink has been spilled on the role that such principle could play in balancing different fundamental rights.⁸⁴ For example in balancing, on the one hand,

82 Opinion of Advocate General Wathelet, Case C-170/13, *Huawei Technologies Co. Ltd. v. ZTE Corp. and ZTE Deutschland GmbH*, EU:C:2014:2391. The Court, however, did not develop on this point in its decision.

83 A. Ohly, ‘Three principles of European IP enforcement law: effectiveness, proportionality, dissuasiveness’ in J. Drexler et al. (eds), *Technology and Competition, contributions in honour of Hanns Ulrich* (Bruxelles, Larcier 2009) 257. See also: Seuba, n. 3. On the role of proportionality in the enforcement of IPRs in the United States, see the seminal work of P. Merges, *Justifying Intellectual Property* (Harvard University Press 2011).

84 This balancing exercise is particularly present in the case law of the CJEU, as well as national courts, in the field of copyright. See e.g.: C. Geiger and E. Izyumenko, ‘Blocking Orders: Assessing Tensions with Human Rights’ (2019) CEIPI Research Paper No. 2019-03 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3392253> accessed 27 Jan. 2020. M. Husovec, ‘Intellectual Property Rights and Integration by Conflict: The Past, Present and Future’ (2016) 18 CYELS 239.

the fundamental property right of right holders (as protected under article 17(2) of the European Charter of Fundamental Rights) and, on the other hand the right of, e.g., conduct of business (protected under article 16 of the EU Charter) of defendants.⁸⁵ In these instances, courts are requested to engage in a balancing test to infuse some flexibility in litigation in order to attain an adequate or satisfactory outcome. In the framework of patent litigation in particular, there is a growing trend in literature that considers that such balancing should also take place vis-à-vis injunctive relief⁸⁶.

- 46 What is proposed in this paper is that, the principle of proportionality should not necessarily be limited to a balancing exercise between different fundamental rights but should function as a criterion for assessing the adequacy of enforcement measures. A balancing exercise may be relied upon in order to determine whether the exercise of an IP right has or not encroached on a competing fundamental right. Additionally, the proportionality principle could play a more prominent role at the remedial level. In the case law of the CJEU regarding the enforcement of copyright the focus has already been on the role of proportionality for the grant of an injunction against intermediaries.⁸⁷ The proportionality principle could infuse more flexibility in the determination of the remedies for patent infringement. After all, the text of the Enforcement Directive clearly stipulates that the “measures, procedures and remedies” shall be proportionate.

3. Abuse of rights, proportionality and over-enforcement in patent litigation

- 47 In light of the previous observations, it appears that the theory of abuse of rights has underpinnings in the Enforcement Directive and, together with the principle of proportionality that lies at the core of this theory, has the potential to address situations of excessive exercise of IP rights and prerogatives.
- 48 By doing so, and by relying on article 3(2) of the Directive (and the national conceptions of abuse) some of the concerns identified in the communication papers of the Commission and its evaluation of the Enforcement Directive may be reduced. In particular, we point here at three common criteria used by national courts (within and outside the framework of IP litigation) to limit the abusive exercise of IP rights, i.e. i) the intention to harm criterion, ii) the proportionality criterion and iii) the right-function criterion.⁸⁸
- 49 The first two criteria do not require extensive explanation. National courts have generally considered that the exercise of rights with bad faith or with an intention to harm may be considered abusive.⁸⁹ As for the proportionality criterion, it has been previously mentioned that it could be internalised in order to function as a criterion for assessing the adequacy of enforcement measures.⁹⁰ The last criterion, however, has less often been relied upon by national courts. This is somewhat regrettable as it could be most helpful in light of the current concerns and practices of certain IP right holders such as PAEs.
- 50 The right-function criterion could be relied upon in order to counteract the use of rights and remedies in a manner that would notably contradict the purpose for granting those rights and remedies.⁹¹ The purpose which may serve as a reference for the assessment of abuse could be found under the rules of enforcement adopted in national legislation and interpreted in

85 In patent law, see e.g., in the Netherlands: Rechtbank's Gravenhage, 30 Sept. 2009, HA ZA 09-1951. Gerechtshof Den Haag, 27 Jan. 2015, KG ZA 14-185 (on appeal). HR, 14 April 2017, 15/01813 (judicial review). Opinion AG Van Peursem, HR, 30 Sept. 2016, 15/01813, pt. 2.37 et seq.

86 Biddle, n. 26. C. Caron, 'Les mauvaises actions en contrefaçon' (2019) *Comm. Commerce électronique* n.4. R. Sikorski (ed), *Patent Law Injunctions* (Kluwer Law International 2019). In April 2019, LMU Munich hosted a conference on 'Injunctions and Flexibility in Patent Law' <<https://www.en.zr11.jura.uni-muenchen.de/conference-april/presentations/index.html>> accessed 6 Aug. 2019. A contrario, some authors also argue that to infuse more proportionality in the grant of injunctive relief would be hazardous and could severely disturb the balance of the patent system as a whole. L. Tochtermann, 'Injunctions in European Patent Law' (2019) 4IP Council <<https://www.4ipcouncil.com/research/injunctions-european-patent-law>> accessed 24 July 2019.

87 Husovec, (n 84) 251; Strowel, (n. 2).

88 A. Léonard, 'Abuse of Rights' in Belgian and French Patent Law – A Case Law Analysis' (2016) 7(1) JIPITEC 30. A. Léonard, 'L'abus de droit dans le contentieux des brevets – Entre divergences nationales et vœu d'harmonisation de la juridiction unifiée du brevet – Une piste à suivre?' (2017) 1 Prop. Ind., étude 2.

89 Eg in France: CA Paris, 5-2, 31 Jan. 2014, RG 12/05485. In Germany: OLG Dusseldorf I-2 U 131/08 (28.01.10). In the UK: Research in Motion UK Ltd. v. Visto Corporation [2008] EWCA Civ 153.

90 Eg in the UK in *HTC Corporation v. Nokia Corporation* [2013] EWHC 3778 (Pat) at 26-27.

91 Metzger, (n 79) 251.

conformity with the Enforcement Directive (i.e. an enforcement purpose)⁹². The purpose referred to may also be the general purpose of patent law under the rule of national patent law but also in light of general treaties such as the TRIPs Agreement or the Paris Convention (i.e. substantive purpose).

4. Abuse of rights and proportionality with regard to injunctive relief

51 In the past few years, the CJEU, as well as some national courts, have tailored new solutions in terms of injunctive relief.⁹³ The idea is growing that courts should infuse more considerations of flexibility and proportionality before granting this remedy. We envisage here three sanctions of abuse which could infuse these considerations of flexibility and proportionality in the context of injunctive relief.⁹⁴

a) Temporary stay

52 A first sanction would be for national courts to order an injunction but to stay its enforcement for a certain period. This would represent a minor encroachment vis-à-vis injunctive relief and could constitute an adequate means to prevent abusive enforcement. Under this scenario, courts would not alter the legal requirements for the grant of injunctive relief. Findings of infringement (and validity) would still be sufficient to justify the measure. However, courts would put the enforcement on hold by, for example, undergoing a balance of interests, by considering the potential for a wrongful enforcement of the measure, or by taking into consideration previous procedural misconducts by right holders. A stay could last for a sufficient period to allow would-be

infringers to design-around and find non-infringing ways to exploit their products or services. This approach is an attractive option as it reduces the risks that a potential infringer, under the threat of an injunction, may be inclined to pay for licensing fees which reflect a holdup value.⁹⁵ To order a stay also avoids the difficulties of evaluating the harm caused by an injunction which may be wrongfully enforced, e.g. because it is found on appeal that the patent was invalid, and/or that there was no infringement and that the right holder knew or should have known, or acted with bad faith.

53 In some instances, in Germany, the UK and most recently in the Netherlands, courts have granted temporary stays on the enforcement of injunctive relief. In the UK, the balance of interests between the parties has been of fundamental importance in the decision to stay.⁹⁶ Additionally, the consequences of enforcement on the public interest have also been considered as an element which may tilt the balance in favour of a stay.⁹⁷ Stays have been granted to encourage negotiations between the parties⁹⁸ but also to enable potential infringers to make alterations to render products or processes non-infringing, i.e. to invent or design-around.

54 In 2019, the Court of Appeal of the Hague stayed the enforcement of an injunction notably in light of the “significant damage” that such remedy may cause to a defendant. The Court held that the interests of the parties must be considered in the determination of whether an injunction should be stayed. In particular, it must be determined whether the interests of the beneficiary of the injunction outweighs those of the defendant. As part of its reasoning, it considered that the injunction touched upon the core business of the defendant, that there were no non-infringing alternatives available, and that there was a risk that the defendant would not be able to recover from the damages caused by the injunction if findings

92 For example, recital 2 of the Enforcement Directive stipulates that “the protection of intellectual property should allow the inventor or creator to *derive a legitimate profit* from his/her invention or creation” (Emphasis added). The reassessment of the exercise of patent prerogatives in light of this recital may influence courts to decide on whether the exercise is actually in line with this objective of “legitimate” profit.

93 S.A. Smith, ‘The Structure of Remedial Law’ in D. Campbell and R. Halson (eds), *Research Handbook on Private Law Remedies* (Edward Elgar 2019).

94 Part of the suggestions made in the following paragraphs are issued from the PhD thesis of one of the authors. A. Léonard, *Abuse of rights in European patent law: Reconsidering the principle of the prohibition of abuse of rights as an internal correction mechanism against over-enforcement practices by right holders*, Leuven, May 2019 (manuscript with the author).

95 N. Siebrasse, ‘Holdup, Holdout and Royalty Stacking: A Review of the Literature’ in B. Biddle et al. (eds), *Patent Remedies and Complex Products: Toward a Global Consensus* (CUP 2019) 500-50. M.A. Lemley and C. Shapiro, ‘Patent Holdup and Royalty Stacking’ (2007) 85 *Texas L. Rev.* < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=923468#> accessed 27 Jan. 2020.

96 *Regeneron Pharmaceuticals, Inc. v. Kymab Ltd. & Anor* [2018] EWCA Civ 671.

97 *Adaptive Spectrum and Signal Alignment Inc. v. British Telecommunications Plc.* [2014] EWCA Civ 1513, at 6. *Edwards Lifesciences LLC v. Boston Scientific Scimed Inc.* [2018] EWHC 1256 (Pat) and [2017] EWHC 755 (Pat).

98 *Unwired Planet International Ltd. v. Huawei & Samsung* [2017] EWHC 711 (Pat).

of infringement were later overturned on appeal. The lack of redress was particularly worrisome for the court as the injunction had far-reaching consequences in the business of the defendant and compromised its viability on the market. The Court, however, did not explicitly refer to article 3(2) IPRED.⁹⁹

- 55 In Germany, the conditions to obtain a stay have been interpreted in a stricter manner than in the UK.¹⁰⁰ In 2016, the German Federal Court of Justice held that two cumulative conditions must be met to stay the enforcement of an injunction. First, a stay would only be granted if the enforcement of the injunction would be disproportional, i.e. if the immediate enforcement would lead to severe consequences for the defendant which go far beyond the intended effects of the injunctive relief and therefore would be unacceptable. Second, the enforcement should be considered non-justifiable and contrary to the principle of good faith (under §242 BGB). The Federal Court came to this conclusion on the basis of §242 BGB read in combination with article 3(2) IPRED and article 30 TRIPs and held that a grace period would be possible even if it is not explicitly envisaged under German patent law. These two conditions may be interpreted less strictly within the context of enforcement of a SEP when patent holders have promised to license their technology under FRAND terms.¹⁰¹ However, the general interpretation would remain fairly strict.
- 56 Overall, by relying on two cumulative conditions, and in particular by requesting that the enforcement be contrary to the principle good faith to justify a stay, the German Federal Court of Justice does not leave many possibilities for courts to grant a stay. A subsequent decision from the Dusseldorf Regional Court limited even more this possibility by stating that the interests of third parties or the public should not be considered at all in deciding whether to grant a stay.¹⁰² Moreover, the difference in interpretation

99 Gerechtshof Den Haag, 2 Dec. 2019, HA ZA 16-1108. Some procedural issues were also at stake in this case.

100 BGH, 10 May 2016, XZR 114/13. The grace period was, nonetheless, not granted. T. Müller-Stoy, 'The German Federal Court of Justice on availability of injunctive relief and equivalent patent infringement (BGH, judgement of May 10th 2016 - XZR 114/13)' (2016) <<https://www.bardehle.com/de/ip-news-wissen/ip-news/news-detail/the-german-federal-court-of-justice-on-availability-of-injunctive-relief-and-equivalent-patent-infri.html>> accessed 6 Aug. 2019.

101 OLG Karlsruhe 6 U 136/11 (23.01.12) and OLG Karlsruhe 6 U 38/09 (11.05.09).

102 LG Dusseldorf 4a O 137/15 (09.03.17). The court held that the

that exists between UK (objective proportionality and public interest) and German (absence of good faith) courts, as to the conditions leading to a stay, may be detrimental to a proper enforcement of patents on the European market.¹⁰³ Inconsistent applications of the requirements envisaged under article 3(2) IPRED may lead to legal uncertainty for litigants.

- 57 To order a stay on enforcement may seem particularly intrusive on the exclusive rights of patent holders. However, safeguards may be put in place in order to limit the invasiveness of such tailoring of injunctive relief. First, a stay will necessarily be temporary. The effect of the remedy will be delayed for a limited period, but the remedy as such will still be available to right holders. As a second safeguard, courts may ensure that the order to stay is flexible enough to allow them to review the order in light of circumstantial changes. Finally, as a third safeguard, the order to stay may be accompanied by the provision of guarantees. For example, potential infringers who benefit from a stay may offer undertakings to compensate the right holder in case of undue prolongation.¹⁰⁴

b) Denial of injunctive relief

- 58 A second and more invasive sanction of abuse is the possibility for courts to deny injunctive relief. The refusal to grant a measure when a right is exercised abusively constitute a traditional sanction of abuse. Therefore, to deny injunctive relief may be considered an appropriate remedy to findings of abuse in the framework of patent litigation.

right to an injunction does not depend on proportionality considerations, rather, such consideration may only play a role in determining whether to grant a compulsory licence under §24 PatG. Further, the court found nothing out of the ordinary in the procedure at hand, or any bad faith on the part of the patentee, which would justify a stay.

- 103 For example, in a parallel infringement suit in UK and Germany, the UK court granted a stay pending appeal in order for clinicians to be retrained to use another device than the patented (and infringed) device. The court considered that, in light of the public interest, it was proportionate to stay the enforcement and to allow for such tailoring. A contrario, in Germany, the court granted an injunction without a stay pending appeal. LG Dusseldorf 4a O 137/15 (09.03.17).

- 104 The latter two safeguards have been evoked in the UK in *Edwards Lifesciences LLC v. Boston Scientific Scimed Inc.* [2018] EWHC 1256 (Pat) and [2017] EWHC 755 (Pat).

- 59 Article 11 of the Enforcement Directive stipulates that: “where a judicial decision is taken finding an infringement of an intellectual property right, the judicial authorities may issue against the infringer an injunction aimed at prohibiting the continuation of the infringement []”. Textually, article 11 only requires that Member States provide for the availability of injunctions but does not stipulate that national courts should grant an injunction for all cases of infringement.¹⁰⁵
- 60 Additionally, this provision must also be read in combination with recitals 17 and 24 as well as article 3 of the directive. Recital 17 provides that “the measures, procedures and remedies provided for in this Directive should be determined in each case in such a manner as to take due account of the specific characteristics of that case, including the specific features of each intellectual property right and, where appropriate, the intentional or unintentional character of the infringement”. While recital 24 stipulates that prohibitory measures, as well as corrective measures, shall be appropriate and justified by the circumstances of the case.¹⁰⁶
- 61 To deny injunctive relief is therefore not excluded by the text of the Enforcement Directive. An abusive exercise of the right to obtain such relief should be sufficient to justify the denial of such remedy. In theory, this is recognised by all civil law countries. However, as identified in the case law analysis, the interpretation given to the principle of abuse is generally limited to consideration of bad faith or intention to harm (i.e. the subjective criterion). Consideration of proportionality and the right-function criterion are less often recognised as useful tools by national courts.
- 62 With regards to proportionality, it is generally argued that German courts neither benefit from discretionary powers nor engage in a proportionality test or a balancing exercise before granting permanent injunctions.¹⁰⁷ The interpretation of two fundamental provisions in German law seems to lead to this conclusion. First, the lack of court discretion with regard the right to injunctive relief is justified on the basis that patent rights are property rights and are therefore protected under article 14 of the ‘Grundgesetz’¹⁰⁸. To deny injunctive relief to successful right holders seems to interfere too greatly with a regime of protection under this provision. Second, §139(1) PatG¹⁰⁹ stipulates that an aggrieved party may sue a potential infringer for cessation and desistance. This provision, which is the legal basis for injunctive relief, is generally interpreted as leaving little to no room for discretion to judges¹¹⁰. Overall, with the exception of defences based on competition law, German courts have been “largely deaf to arguments based on abuse of rights”¹¹¹ to deny injunctive relief.
- 63 It is argued here that, in light of the changes in litigation behaviour and the room for over-enforcement practices left to patent holders, the practice of national courts in Europe to grant injunctive relief on a quasi-automatic basis should be reconsidered. A distinction should be made between the right to obtain a remedy and the said remedy itself. An injunction does not necessarily have to follow the right to obtain a remedy, or the right to exclude as such¹¹². By adopting this distinction between a right and a remedy, even if German courts put a strong emphasis on the fact that patent rights are protected under article 14 of the ‘Grundgesetz’, this should not necessarily lead to the conclusion that an injunction should be granted as a remedy to the breach of the right to exclude. As for §139(1) PatG, if this provision provides for a right to claim
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- 105 A. von Mühlendahl, ‘Enforcement of Intellectual Property Rights – Is Injunctive Relief Mandatory?’ (2007) 38 IIC 377.
- 106 For an analysis of article 11 see also M. Marfé et al., ‘The power of national courts and the Unified Patent Court to grant injunctions: a comparative study’ (2015) 10(3) JIPLP 180.
- 107 Rademacher, (n. 70) 334; Scharen, (n 70).
- 108 P. Hess, T. Müller-Stoy and M. Wintermeier, ‘Are Patents merely “Paper Tigers”?’ (2016) <http://www.bardehle.com/fileadmin/Papiertiger/Papiertiger_en.pdf> accessed 27 Jan. 2020.
- 109 §139(1) PatG: (1) Any person who uses a patented invention contrary to sections 9 to 13 may, in the event of the risk of recurrent infringement, be sued by the aggrieved party for cessation and desistance. This right may also be asserted in the event of the risk of a first-time infringement <http://www.gesetze-im-internet.de/englisch_patg/englisch_patg.html#p0755> accessed 7 Aug. 2019.
- 110 For a review of the constitutionality of §139 PatG and a plea for an amendment of this provision, see H.-J. Papier, ‘Verfassungsrechtliche Anforderungen an den Patentschutz’ (2016) 8(4) Zeitschrift fuer Geistiges Eigentum 431.
- 111 C. Heath and T.F. Cotter, ‘Comparative Overview and the TRIPS Enforcement Provisions’ in C. Heath (ed), *Patent Enforcement Worldwide: Writings in Honour of Dieter Stauder* (Oxford Bloomsbury Collection 2015) 5, footnote 9. C. Osterrieth, ‘Patent Enforcement in Germany’ in C. Heath (ed), *Patent Enforcement Worldwide: Writings in Honour of Dieter Stauder* (Oxford Bloomsbury Collection 2015) 132.
- 112 Seuba, n. 3, 17. R. Castro Bernieri, *Ex-Post Liability Rules in Modern Patent Law* (EDLE, Intersentia 2012) 21.

an injunction, it does not necessarily guarantee that the claimant will obtain this particular relief.

- 64 In January of this year, the German Ministry of Justice published a draft amendment to the German Patent Act¹¹³ providing some guidance on the role of proportionality vis-à-vis injunctive relief. Under the current draft, §139(1) PatG should be interpreted as meaning that: “The claim [to injunctive relief] is precluded to the extent that its *enforcement would be disproportionate because* it would, due to special circumstances, *taking into account* the patent holder’s interests against the infringer and the *good-faith principle, constitute a hardship not justified by the exclusionary right*” (Emphasis added).¹¹⁴ This clarification of the text may be welcome but, as illustrated in the cases studied in this paper, it does nothing more than what is currently the practice of courts. Moreover, as previously mentioned, the reference to the principle of good faith which includes subjective considerations limits the possibilities to engage in an objective proportionality test. If the two conditions evoked in the amendment (i.e. the balancing exercise between different interests and the principle of good faith) are cumulative, we believe that the latter principle will heavily limit the scope of application of the principle of proportionality. We also observe that the Enforcement Directive does not refer to good faith or subjective considerations under article 3(2). Overall, we question whether the amendment truly represents a step towards more consideration of proportionality under German patent law.
- 65 To conclude on this point, the application of the principle of abuse through article 3(2) of the Enforcement Directive may provide courts with some leeway to determine whether they should grant or deny injunctive relief. First, if it can be demonstrated that a right holder engaged in litigation with bad faith or aims at enforcing an injunction with a clear intention to harm, such injunction should be denied. This is currently what is understood in most jurisdictions where it is accepted that the prohibition of abuse of rights may limit the opportunities of patent holders.
- 66 Next to these instances, and in light of the criterion of proportionality, general consideration of reasonableness and proportionality should also be considered in order to prevent the risk of abuse. Considerations of proportionality could lead to the denial of injunctive relief if, e.g. the defendant has developed the infringing technology independently or whether it has copied it, but also whether the infringer engaged in literal infringement or infringement by equivalent or if the infringement is due to negligence or intentional actions.¹¹⁵ All these elements mainly focus on the behaviour of the alleged infringer. Under an analysis of abuse, considerations of proportionality may also reflect on the behaviour of right holders. For example, instances in which right holders exercise their rights with no legitimate or reasonable interest, or when confronted with different ways of exercising their rights in an equally beneficial manner, choose the most disadvantageous option for a third party or the one that disregards the general interest, may lead to findings of an abuse. This approach may be useful vis-à-vis right holders who are equally interested in obtaining an injunction or on-going royalties. Moreover, the proportionality criterion allows courts to consider whether to grant an injunction would be appropriate in case of e.g. complex product where the patent which has been infringed represent one of many patents relevant for a final product.
- 67 Finally, the right-function criterion of abuse – which invites to a teleological interpretation, a common approach in law – may also present some advantages for courts. For example, if a right holder relies on the threat of injunction to, *in fine*, negotiate a license and royalties because it does not practice the invention on any market (a common feature of many PAEs), it could be argued that the grant of the injunction would be contrary to the purpose of the right to claim an injunction as a remedy, *i.e.* to oppose future acts of exploitation and the continuation of an infringement¹¹⁶. This would be particularly useful in instances involving PAEs. The right-function criterion may also allow courts to consider whether the public and/or consumers would be better served with an injunction. After all, one of the functions of patent law is to serve the interests of the public at large.

113 Federal Ministry of Justice and Consumer Protection, ‘Entwurf eines Zweites Gesetz zur Vereinfachung und Modernisierung des Patentrechts’ (14 Jan. 2020) <https://www.bmjjv.de/SharedDocs/Gesetzgebungsverfahren/DE/PatMoG_2.html;jsessionid=21C79BAAFF298F1C27DCC248EAE70DD4.1_cid334?nn=6712350> accessed 28 Jan. 2020.

114 FOSS Patents (Blog) ‘Proportionality clause in draft German patent reform bill falls short of not only *eBay v. MercExchange* but also the EU’s definition’ (17 Jan. 2020) <<http://www.fosspatents.com/2020/01/proportionality-clause-in-draft-german.html>> accessed 28 Jan. 2020.

115 Ohly (n 83) 264.

116 See e.g.: recital 24 of the Enforcement Directive which provides that: “depending on the particular case, and if justified by the circumstances, the measures, procedures and remedies to be provided for should include prohibitory measures aimed at preventing further infringements of intellectual property rights”.

68 To deny injunctive relief on this ground would also be supported by the fact that, when measures requested do not present any socially useful characteristics (considerations which would be left to the appreciation of courts in light of all the circumstances of a case¹¹⁷) they could be refused on the basis of the prohibition of abuse. Guidance on the social usefulness of an injunction may be found in the general objectives of article 7 of the TRIPs Agreement, i.e. the promotion of technological innovation, the transfer and dissemination of technology, the mutual advantage of producers and users, social and economic welfare, and the balance of rights and obligations. The right-function category could be assessed in light of, not only, the rationale for enforcement measures (i.e. the purpose of the injunction to put an end to situation of an illegal exploitation by a third party), but also in light of the rationale for the patent rights themselves (e.g. under an interpretation of article 7 TRIPs).

c) Forward-looking damages in lieu of injunctive relief

69 It is clear that without the possibility to obtain an injunction, the exclusive right to exclude as well as the property interests of rights holders might be severely diminished.¹¹⁸ Therefore, even if the grant of injunctive relief may, under certain circumstances, be reconsidered in light of the abusive practices of right holders, it remains that infringing acts cannot live on with impunity.¹¹⁹ In this sub-section, we explore the possibility for national courts to substitute injunctive relief with the grant of forward-looking damages as a sanction of abuse.

70 Under the regime envisaged by the European Directive, i.e. article 12, pecuniary compensation in lieu of injunctive relief relies on three conditions. First, the claimant (i.e. the infringer) has to show that the acts of infringement have been committed unintentionally and without negligence. Second, it has to convince the competent judicial authority

that the execution of the injunction would cause disproportionate harm. Finally, it has to be clear that pecuniary compensation is satisfactory for the patent holder. It is unclear whether these conditions are cumulative or alternative.¹²⁰

71 Some commentators have criticised the potential cumulateness of these conditions as being too restrictive of the discretionary powers of courts. According to Ohly (2009), the (too) narrow wording of article 12 and the cumulateness of the three conditions for substituting injunctive relief with compensatory damages does not prevent the application of article 3 of the Enforcement Directive. Therefore, even outside the scope of article 12 IPRED, national courts should be able to grant damages in lieu of injunctive relief if the grant of injunctive relief appears to be disproportionate¹²¹. A relaxation in the interpretation of article 12 IPRED also seem to be favoured in the Support Study for the evaluation of the Enforcement Directive of 2017. For example, the authors of the study evoked the possibility of refusing to grant an injunction in the particular case of complex products and the replacement of such remedy by monetary compensation. Overall, a too strict application of article 12 was perceived as running counter the proportionality requirements of article 3 IPRED.¹²² Other commentators, nonetheless, seem to favour the cumulateness of the conditions. They argue that article 12 provides for a helpful multifactor test¹²³, and that the cumulative approach should be preferred because “preventing others from using one’s intellectual property [i.e. through the grant of injunctive relief] constitutes ‘the very subject matter’ of exclusive rights”¹²⁴.

72 Very few European Member States have implemented article 12 of the Directive in their national patent laws.¹²⁵ In Belgium, Neefs (2006) nonetheless

117 In the case law of the CJEU, the Court has already referred to the social functions of IPRs, in particular in terms of the promotion of creativity or investment. See Husovec, n. 84, 242 and the referred case law. C. Geiger, ‘The Social Function of Intellectual Property Rights, or How Ethics Can Influence the Shape and Use of IP Law’ in G. Dinwoodie (ed), *Methods and Perspectives in Intellectual Property Law* (Edward Elgar 2013).

118 Heath and Cotter, (n 111) 5.

119 A. Jones and R. Nazzini, ‘The Effect of Competition Law on Patent Remedies’ in B. Biddle et al. (eds), *Patent Remedies and Complex Products: Toward a Global Consensus* (CUP 2019) 16.

120 P. Blok, ‘A harmonized approach to prohibitory injunctions: reconsidering Article 12 of the Enforcement Directive’ (2016) 11(1) *JIPLP* 56, 59.

121 Ohly, (n 83); European Observatory on Counterfeiting and Piracy, (n 90) 4.

122 Commission, (n 24) 113.

123 Blok, (n 120) 56.

124 *Ibid*, 59.

125 T.F. Cotter, *Comparative Patent Remedies* (OUP 2013) 245. Commission Staff Working Document, ‘Analysis of the application of Directive 2004/48/EC of the European Parliament and the Council of 29 April 2004 on the enforcement of intellectual property rights in the Member States Accompanying document to the Report from the Commission to the Council, the European Parliament

observes that the “transposition would have been entirely superfluous, [since] none of the provisions mentioned in 1.6. and 1.7. [i.e. corrective measures and injunctions] require the judge to automatically grant the measures”¹²⁶. Some commentators in France share a similar position.¹²⁷ In the Netherlands, it was decided not to implement this provision since an “obligation to pay damages for unintentional and non-negligent infringement [i.e. the first condition of article 12] would contravene the basic civil law principle that a person is liable for damages only if he has acted intentionally or negligently”¹²⁸. In the UK, the discretionary powers of courts are considered sufficient to ensure compliance with article 12.¹²⁹ Finally, article 12 has been implemented in the German Copyright Act, but not in the ‘*Patentgesetz*’, and takes a cumulative approach to the provision.

- 73 Assuming that courts in Europe recognise that to grant forward-looking damages represent a viable alternative to injunctive relief in case of abuse, a fundamental issue remains. The scenario under which national courts may grant such remedy in lieu of injunctive relief presents similarities with situations in which courts or governmental authorities may order compulsory licences.¹³⁰ However, the relationship between the (presumably

discretionary powers of courts to grant forward-looking damages in lieu of an injunction, and their legislatively constrained competences to grant compulsory licences, is, at best, ambiguous.

- 74 In order to overcome this apparent obstacle, we suggest to more fully embrace the fact that the principle of the prohibition of abuse of rights represents a correction mechanism limiting the exercise of rights by their holders. Under this approach, the grant of forward-looking damages would represent the remedy considered adequate by judges to correct the distorted exercise of the right to claim injunctive relief and not a compulsory license impose to right holders. To some extent, this approach would also be in line with the intentions of the European legislator at the time of the elaboration of article 12 IPRED. Blok (2016) observed that, at the time of the draft directive, the Commission made clear that the monetary compensation in lieu of injunctive relief was meant to protect the interests of defendants, i.e. as a “safeguard against unfair litigation”¹³¹. Since the application of the prohibition of abuse of rights, in the context of patent enforcement, may serve to reduce the negative effects of unfair litigation practices, we believe that its application could lead to the grant of forward-looking damages in lieu of injunctive relief.

and the European Social Committee on the application of Directive 2004/48/EC of the European Parliament and the Council of 29 April 2004 on the enforcement of intellectual property rights’ COM(2010) 779 final, SEC/2010/1589 final.

- 126 K. Neefs, ‘Transposing the Enforcement Directive: *Quid novi sub sole* for copyright in Belgium?’ (2007) <<https://www.droit-technologie.org/wp-content/uploads/2016/11/annexes/actuality/1048-1.pdf>> accessed 7 Aug. 2019.
- 127 C. Le Stanc, ‘L’abus dans l’exercice du droit de brevet : les « patent trolls »’ (2010) 9(10) *Propriété Industrielle* 3. A. Pezard, ‘Pouvoir d’injonction et interdiction “Patent troll”’, *Présentation at ASPI* (11 Déc. 2013) <<https://www.aspi-asso.fr/attachment/467436/>> accessed 7 Aug. 2019.
- 128 Blok, (n 120) 58.
- 129 Marfé, (n 106) We refer here to Section 50 of the Senior Courts Act 1981 and the case law of the courts applying the conditions developed in *Shelfer v. City of London Electric Lighting Co* (No.1) [1895] 1 Ch. 287. In particular the UK Supreme Court decision in *Coventry and Others v. Lawrence and Another* [2014] UKSC 13 (2014) 2 WLR 433.
- 130 C. McManis and J. Contreras, ‘Compulsory licensing of intellectual property: A viable policy lever for promoting access to critical technologies?’ in G. Ghidini, R. Peritz and M. Ricolfi (eds), *TRIPS and Developing Countries – Towards a New World Order* (Edward Elgar Publishing 2014) 110.

E. Conclusions

- 75 The general power of courts to tailor and adapt the conditions of a final remedy creates a distinction between the right to “a” remedy and “the” remedy itself.¹³² Concerning the enforcement of IP rights, and patent rights in particular, the same distinction has also been observed by some commentators. In patent litigation, the right to obtain a remedy in case of infringement should be distinguished from the right to obtain *an injunction* as a remedy.¹³³ The consequences of the enforcement of an injunction such as the disproportionate harm that it may cause for the debtor of the order, the impact that such enforcement may have on the public and consumers, the advantages the grant of an injunction may create for right holders, as well as the objectives pursued by right holders to obtain such remedy, should drive national courts in Europe to reconsider their practice of granting injunctive relief on a quasi-automatic basis.

131 Blok, (n 120).

132 S. Evans, ‘Defending Discretionary Remedialism’ (2001) 23 *Sydney L. Rev.* 463, 474.

133 Seuba, (n 3).

76 All these elements could be considered in the application of the principle of the prohibition of abuse of rights which relies on the overarching proportionality principle. Such principles would provide national courts in Europe with a tool to respond to over-enforcement concerns and which would be capable of reflecting the changes witnessed in recent years in patent litigation. To reconsider the exercise of patent prerogatives at different stages of the litigation process in light of the prohibition of abuse and the proportionality requirement under article 3(2) IPRED is particularly important as it may drive deterrence, i.e. in over-enforcement practices, but also set incentives, i.e. in adopting a non-abusive and non-disproportionate conduct in litigation. Before entering in a legal dispute, or even before sending a notice of infringement, right holders, including PAEs, will have to ponder the risk of being sanctioned for abusive behaviour or disproportionate claim. Such deliberation will not be prohibitive for right holders acting along the lines of reasonableness. On the contrary, those who deliberately engage in reprehensible behaviour or push the exercise of their rights to their limits will arguably have to adapt such exercise. A change to the incentive framework for requesting injunctions in patent litigation will not only reduce the number of unjustified court proceedings – something that could be assessed –, it will as well change the pre-trial practices and reduce the aggressive behaviour of many patent-holding entities towards legitimate businesses – something that goes largely unnoticed. An adjusted framework for enforcing patents will remove many unreported threats that small and large European companies are commonly facing.

77 Even if Member States have not explicitly implemented article 3(2) IPRED in their national laws¹³⁴, their judicial authorities are under a duty to interpret national laws consistently with the Enforcement Directive. National courts must give full effect to the Directive and must ensure that its objectives are achieved by implementing a teleological interpretation¹³⁵ of the text.¹³⁶ Among these objectives, the principles of effectiveness, dissuasiveness and proportionality are of paramount importance. The approach proposed in this paper is not only in line with the text and spirit of the Enforcement Directive (in particular with regard to article 3, and recitals 17, 22, 24, 25) but also with the

TRIPs Agreement (in particular vis-à-vis article 8(2) and article 41(1)). To rely more systematically on the principle of abuse, as well as on the proportionality principle¹³⁷, represents one way of interpreting the Directive with more cautiousness. This would help in mitigating the risks related to over-enforcement practices and in aligning the patent litigation practices with the justification of the Directive, i. e. fighting piracy and counterfeit. When patent litigation and the strong enforcement tools provided by the Directive are used in other contexts, there is a pressing need to refer to the general principles (as provided for in article 3(2) IPRED) for adjusting the remedies. The conditions required for a successful claim under this approach do not swing the pendulum too far in favour of alleged infringers. Checks and balances are in place to constrain overzealous claims of abuse by defendants and continue to support the principles of effectiveness and dissuasiveness which are of great importance to the system of adjudication of IPRs¹³⁸.

134 G. Cummings, M. Freudenthal and R. Janal, *Enforcement of Intellectual Property Rights in Dutch, English and German Civil Courts* (Kluwer Law International 2008) 130.

135 D. Stauder, 'Developing a Uniform Application of European patent Law' in D. van Engelen (ed), *On the Brink of European Patent Law* (Eleven International Publishing 2011) 116.

136 Cummings, Freudenthal and Janal, (n 134) 49.

137 To some extent, this was already envisaged in the initial draft of the Enforcement Directive. At the time, it was advanced that the proportionality principle would function as a flexible mechanism allowing to take the seriousness of an infringement into account. Kur, n. 14, 823.

138 Seuba, n. 3, 104.

Unscrewing the Future: The Right to Repair and the Circumvention of Software TPMs in the EU

by **Anthony D. Rosborough***

Abstract: This analysis examines the impact of software technological protection measures (“TPMs”) in the European Union which inhibit the repair and maintenance of products. Using John Deere tractors as a case study, this analysis addresses the growing number of products which incorporate computerisation and TPM-protected software into their design and function. In utilising software integration and TPMs, many product designs now allow manufacturers to retain considerable control over the manner of repair and choice of technician. In response, consumers and lawmakers are calling for legal reforms to make self-repair and servicing easier. Both the competition law and moral implications of this residual control held by manufacturers are examined in this analysis. The foregoing raises the question: what are the impediments to establishing a secondary market for repair of products which utilise software TPMs, and what are the implications of those impediments?

The structure of the EU’s software TPM framework acts a major impediment to establishing a secondary repair market for these products. The implications of this impediment are both legal and moral. This analysis surveys the development of anti-circumvention law in the international and European contexts before assessing the impact of the US approach to anti-circumvention on global manufacturing and design techniques. In assessing the EU legal framework, the analysis focuses on the inconsequential and distinct legal status given to TPMs which protect software from other types of works. The inability to circulate the means of circumvention acts as a key impediment to establishing a secondary market for repair. Further, the inapplicability of copyright exceptions and limitations to software TPMs, and the legal prohibition on circulation of the means

of TPM circumvention, jointly leave little room for proactive policymaking. Through these legal protections, manufacturers can escape the perceived threat posed by TPM circumvention tools and, by extension, undermine independent technicians’ ability to carry out their businesses.

In assessing the John Deere case study, the analysis proposes that the refusal to allow circulation of the means of software TPM circumvention may constitute an abuse of a dominant position in the secondary market. In looking to jurisprudence in this area, the analysis explores the degree to which the refusal to provide the means of circumvention could amount to the denial of an essential facility which is indispensable for the secondary repair market. While some distinctions can be drawn between TPM circumvention and the types of intellectual property rights at issue in the EU competition law jurisprudence, the analysis proposes that the market effects are in many ways analogous.

The analysis seeks to establish that consumers’ inability to conduct repairs to the products that they own is undesirable for a number of legal, moral and conceptual reasons. By prohibiting self-repair, software TPMs predetermine the relationship between technology, the law and society. This undermines the fostering of a morally responsible and technologically inclined citizenry which engages with and contributes to technological development. The analysis concludes with a call for a review of software TPM protections in the EU along with changes which could alleviate the foregoing market and moral implications while enabling consumers to assert their right to repair.

Keywords: Intellectual property rights; technological protection measures; software; European Union; copyright; right to repair; circumvention; EU competition law; compulsory licensing; secondary market

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Recommended citation: Anthony D. Rosborough, Unscrewing the Future: The Right to Repair and the Circumvention of Software TPMs in the EU, 11 (2020) JIPITEC 26 para 1

A. Introduction & Background

“They are weaker, not stronger: for though we have put wonderful machines in their hands we have preordained how they are to use them.”

C.S. Lewis – *Abolition of Man*

- 1 In the not so distant past, a common feature on most roadways was an institution known as the ‘service station’. In addition to providing gasoline and other necessities, service stations offered motorists with an opportunity to stop and speak with a mechanic to diagnose troubles and repair their cars. Though the mechanic would have many of the same tools that motorists have access to in their homes, his or her value is attributable to knowledge and experience. The nature of automotive design also allowed for deductive reasoning in diagnosing problems. For example, a car that would not start as the result of a dead battery might suggest that it is not being charged properly by the alternator. Rough idling and poor acceleration may also indicate the existence of an electrical fault in the car’s ignition coil or spark plug wiring. Regardless of the emblem on the bonnet or the manufacturer of the car, the mechanic would use reason, judgment and experience to ensure that motorists were able to get back on the road.
- 2 By contrast, today’s roadways are populated by a much different breed of station -- the ‘filling station’. Removed from sight are the once-ubiquitous bottles of engine oil for topping up, spare fan belts, head lamp bulbs, brake fluid, and most strikingly, the mechanic. Gone are the garage doors and hydraulic lifts which allowed mechanics to access cars’ underbodies. What resides on the shelves in the modern filling station is an amalgam of junk food, tasteless coffee, lottery tickets and smartphone accessories. In some respects, this devolution of the service station reflects the transformation in automotive design over the past few decades.¹
- 3 If the mechanic of yesteryear opened the bonnet on one of today’s cars, that hard-earned intuition and deductive reasoning would be of limited use. Instead of the once-familiar sights – the valve cover, engine oil cap, radiator, coolant hoses, brake lines, battery, distributor cap, and so on – what remains visible in today’s cars is a series of plastic enclosures held together by non-standard screws and bolts, each connected by a network of sensors to a central computer which runs on proprietary software. This increase in computerisation and the overall tamper-proof approach to automotive design cannot be exemplified any more clearly than by the disappearance of the oil dipstick on recent BMW car models.² The message is clear: what is beneath the bonnet is a *system* and consumers should have no role in understanding how it works.
- 4 The slow extinction of consumers’ ability to understand, diagnose and repair complex products is not merely an innocent by-product of how modern products are being designed. It is a conscious decision on the part of manufacturers to ensure that the products they are selling can only be effectively serviced and maintained by them. Given this rather frightening trajectory, the question remains: how do we ensure that the future is not quite so *screwed*? This study proposes that the answer lays in empowering consumers to take charge of their own repairs and maintenance.
- 5 In making repair and servicing more difficult for consumers, manufacturers are taking refuge in protections offered by copyright. Beyond the commonplace rights of reproduction, performance and other rights falling under the larger copyright umbrella, modern copyright legislation has also come to protect technological protection measures (“TPMs”). These tools, sometimes referred to as “digital locks”³, impede access to the underlying work protected by copyright. The manner of TPM implementation can vary significantly, ranging from physical controls which prevent the use of “non-approved” products, to software restrictions which prohibit compatibility with non-compliant devices. Spanning the globe, most copyright statutes prohibit the circumvention of such TPMs and the circulation or offering of the means of circumvention.
- 6 The copyright refuge afforded to product manufacturers is made possible largely due to the more widespread use of software and computerisation to control the workings of various products. Examples include not only cars, but also smartphones, cameras, televisions, hot tub controls, and farm tractors.⁴ In increasing reliance

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1 Bryan Grover, ‘What will the gas station of the future look like?’, THE BOSTON GLOBE (17 January 2017) online: <<https://sponsored.bostonglobe.com/rocklandtrust/what-will-the-gas-station-of-the-future-look-like/>>.

2 Jonathan Welsh, ‘BMW Removes the Dipstick’, THE WALL STREET JOURNAL (9 May 2006) online: <<https://www.wsj.com/articles/SB114712089483346960>>.

3 Michael Geist, ‘Anti-circumvention Legislation and Competition Policy: Defining a Canadian Way?’ in Michael Geist, ed, *In the Public Interest: The Future of Canadian Copyright Law* (Irwin Law, 2005) at 214.

4 Eberhard Becker et al., *Digital Rights Management: Technological, Economic,*

on software integration and ‘onboard computer systems’ in product design, manufacturers are able to take advantage of copyright protections for their software and the TPMs they use to protect it. From the perspective of repair-inclined consumers, the result is that products are not only more difficult to repair, but it can be *unlawful* to do so.

- 7 Though copyright laws recognise very specific and limited circumstances under which circumvention of TPMs is permitted, ‘repair’ is not commonly one of them. The legislative history of most copyright laws demonstrates that the widespread use of software integration in the products that surround us was not envisioned ten or twenty years ago. This often rigid legal framework governing TPMs means that consumers are left at the whim of manufacturers for repair and servicing, unless they are otherwise able to devise their own (legally questionable) solutions. The increasing inability for consumers to repair and maintain a variety of products and machines raises legal questions concerning the validity of this practice under competition law principles, as well as more profound moral questions regarding the relationship between society, technology and the law. With the expanse of software-integrated technologies around us through the so-called ‘internet of things’, these implications are only set to become more pressing as times goes on.⁵
- 8 The focus of this analysis is on the legal and moral implications of the rise in ‘unrepairable’ products by virtue of TPMs which protect integrated software. The question that the following analysis addresses is: what are the impediments to establishing a secondary repair and service market for TPM-protected products under European Union law, and what are the implications of any such impediments? In drawing normative guidance from the growing ‘Right to Repair’ movement in the United States and Europe, it will be proposed that the legal and moral validity of software TPM implementation stand on unstable foundations. More specifically, the legal frameworks by which software TPMs in the European Union are supported require scrutiny and review in the context of growing software integration in previously analog devices.
- 9 This analysis will be comprised of four chapters. The first of which will provide an overview of the right to repair movement on a general level before looking more specifically to John Deere’s use of software TPMs in its tractors and farming equipment. Through restricted access to diagnostic software and co-verification or ‘activation’ of replacement

parts, the impact of John Deere’s use of software TPMs on the ability to repair will be assessed. The impacts on the extent to which these tools create inefficiencies and deleterious consequences for farmers and independent technicians will be canvassed. Second, the development of the law of TPM anti-circumvention will be surveyed, including the rationale underlying the relevant international frameworks. Particular attention will be given to the United States’ implementation of anti-circumvention law with a view to better understanding an approach to product design that renders repair and maintenance of certain products exceptionally difficult. Given the global reach of some of these products, the practical effects of the US approach to anti-circumvention law as felt by consumers in the EU will be investigated. The United States’ legal framework for TPM protections offers a useful comparator to that of the European Union because of its approach to exceptions and limitations, along with its broader impact on design and manufacturing of commonly used products. Third, anti-circumvention law in the European Union will be assessed with a particular focus on its application to software. Anti-circumvention law under the Directive 2001/250/EC⁶ (the “InfoSoc Directive”) as distinguished from the provisions of the Directive 91/250/EEC⁷ (the “Software Directive”) will be weighed and compared. The challenges faced by those seeking to repair the things that they own as the result of this bifurcated approach will be examined. In assessing the EU’s software TPM framework, attention will be paid to John Deere tractor owners as a case study for the purposes of demonstrating the potential difficulties imposed by the prohibition on the circulation of the means of TPM circumvention.

- 10 Fourth and finally, the broader implications of the protections afforded to manufacturers under the EU software TPM framework will be assessed. This assessment will be conducted both in the context of EU competition law and market fairness for independent repair technicians, and the moral implications with respect to owners’ inability to conduct repairs themselves. More specifically, the extent to which John Deere’s use of software TPMs constitutes an abuse of a dominant position through the denial of an essential facility for the secondary repair and service market will be examined.
- 11 It will be proposed that access to John Deere’s software and diagnostic equipment through circumvention of their software TPMs is essential for the proper

Legal and Political Aspects (Springer-Verlag, 2003) at 7.

5 Aaron Perzanowski and Jason Schultz, *The End of Ownership: Personal Property in the Digital Economy* (MIT Press, 2016), 135.

6 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*].

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

functioning of that market. By prohibiting access to this software through the use of TPMs, John Deere is effectively reserving the entire secondary market for itself and creating a *de facto* monopoly. This runs contrary to EU competition law principles.

- 12 While John Deere’s use of software TPMs may inevitably present issues under US anti-trust law, these aspects can be distinguished from competition law implications in the European Union due to the special status given to intellectual property rights under the EU competition law framework.⁸ Further, there are conceptual and policy differences between the exercise of “monopoly power” under the United States’ *Sherman Act* and the “abuse of dominant position” under the TFEU framework.⁹ While the ultimate objectives of each regime operate in parallel, their prohibitions on unilateral conduct by dominant firms are distinguishable from the perspective of their application and enforcement.¹⁰ There are also notable differences in the normative approach given to market interventionism and the role of regulation.¹¹ For these reasons, a broader review and analysis of the implications under US anti-trust law will not be addressed in detail.
- 13 With respect to the moral implications, it will be contended that John Deere’s repair-resistant approach to software TPMs denies owners considerable agency in choosing how and when to repair their equipment. In denying consumers the ability to share information, knowledge and tools regarding the circumvention of TPMs for repair purposes, the EU software TPM framework creates for the automation of moral decision-making and places unjustifiable limitations on private property rights. It is contended that John Deere’s use of software TPMs results in an undesirable system characterised by near complete reliance on manufacturers by consumers.

- 14 In sum, this analysis proposes that the European Union’s software TPM framework enables manufacturers’ retention of considerable control

over their sophisticated products. This control is exercised to the detriment of consumers and fair competition in the market for repair and service. John Deere’s use of software TPM is particularly apt for this analysis because it demonstrates the extent to which the use of TPMs can affect products that are not normally regarded as having any relation to software. It is demonstrative of how pervasive the effects of this issue can become. Overall, it is proposed that legal framework for software TPMs in the European Union be given greater scrutiny in light of the significant moral and market implications that can arise when they are used to inhibit repair and maintenance.

B. The Growing “Right to Repair” Movement

- 15 The ‘Right to Repair’ can mean many things. In the context of intellectual property, it is generally understood as both a defence to otherwise infringing conduct and a positive obligation on behalf of manufacturers to assist consumers in repairing and maintaining products they have purchased. This positive obligation can come in the form of offering to consumers repair documentation, spare parts protected by industrial design and patented special tools needed to perform repairs.
- 16 The notion of such a right is not an entirely new proposition.^{12,13} Until 1988, the right to repair had formed the basis for a longstanding common law defence to industrial design infringement in the UK.¹⁴ This defence remained in place until legislative reforms led to a more permissive framework for third parties.¹⁵ Further, in a relatively recent patent infringement case involving transport containers for liquids¹⁶, the UK Supreme Court recognised a distinction between the unlawful “making” of a patented invention and lawful repair.¹⁷ Similarly, the CJEU has decided that automobile wheel rims,

8 John Lang, ‘European competition law and intellectual property rights—a new analysis’ (2010) 11 ERA FORUM 411, 422.

9 Harry First et al., ‘The United States Competition Law System and the Country’s Norms’, in Eleanor Fox and Michael Trebillock, eds, *The Design of Competition Law Institutions: Global Norms, Local Choices* (OUP, 2012), 378.

10 Eleanor Fox, ‘US and EU Competition Law: A Comparison’, in Edward Graham and David Richardson, eds, *Global Competition Policy* (Institute for International Economics, 1997), 353.

11 First (n 9) 379.

12 Gavin Llewellyn, ‘Does copyright law recognise a right to repair?’ (1999) 21 EIPR 596, 598.

13 Robert Masterson, ‘Converting Obsolete Musical Media to Current Formats: A Copyright Infringement Defense Arising from the Right to Repair and Implied Warranty of Fitness’ (2009) 82 TEMP L REV 281, 295.

14 *British Leyland Motor Corp Ltd v Armstrong Patents Co Ltd*, [1986] 1 AC 577; [1986] All ER 850 (UK).

15 *Mars UK Ltd v Teknowledge Ltd* [2000] ECDR 99 (UK).

16 *Schutz (UK) Limited v Werit (UK) Limited*, [2013] UKSC 16 (UK).

17 Erika Ellyne, ‘What the difference between making versus

as component parts of a complex product, should be excluded from protection as a Community Design in order to allow for third-party repair.¹⁸

- 17 Though varying intellectual property regimes have made at least partial accommodation for the needs of consumers and third parties to perform repairs, the rise in consumer consciousness¹⁹ and growing calls for legal reforms²⁰ have been precipitated by the increasing complexity of consumer products through computerisation and software integration.²¹ There is now an expanding coalition of consumers, non-profit advocacy groups^{22,23}, service providers and industry groups²⁴ calling for ‘Right to Repair’ reforms. These reforms include allowing for greater choice in choosing independent repair technicians; greater access to repair manuals and diagnostic tools; and for the ability to circumvent protections on device software.²⁵ The rise in these demands coincide with a growing DIY culture. Indeed, a 2017 study revealed that 77% of EU citizens would rather fix or have their products fixed than to buy new ones.²⁶

repair can teach us on the scope of exclusive rights’ (2015) 37:8 EIPR 525, 527.

- 18 *Acacia Srl v Pneusgarda Srl, in insolvency, Audi AG, and Acacia Srl, Rolando D’Amato v Dr Ing h.c. F Porsche AG* (C-397/16 and 435/16), [2017] EUECJ C-397/16; EU:C:2017:992 (CJEU).
- 19 Matthew Gault, ‘Protesters Are Slowly Winning Electronics Right-to-Repair Battles in Europe’, VICE (14 December 2018) online: <https://www.vice.com/en_us/article/9k487p/protesters-are-slowly-winning-electronics-right-to-repair-battles-in-europe>.
- 20 Teresa Nobre, ‘The European Parliament should be talking about DRM, right now!’, COMMUNIA (11 October 2017) online: <<https://www.communia-association.org/2017/10/11/european-parliament-talking-drm-right-now/>>.
- 21 Frank Vahid, ‘The Softening of Hardware’ (2003) 36 COMPUTER 27, 29.
- 22 European Environmental Bureau, *Homepage*, online: <<https://eeb.org/>>.
- 23 Electronic Frontier Foundation, *Creativity & Innovation*, online: <<https://www.eff.org/issues/innovation>>.
- 24 The Repair Association, *We Are Repair*, online: <<https://repair.org>>.
- 25 iFixit, *We Have the Right to Repair Everything We Own*, online: <<https://www.ifixit.com/Right-to-Repair/Intro>>.
- 26 European Parliament, *Press Release*, “Making durable, repairable goods for consumers and tackling planned obsolescence” (30 May 2017) online: <<http://www.europarl.europa.eu/news/en/press-room/20170530IPR76313/making-durable-reparable-goods-for-consumers-and-tackling-planned-obsolescence>>.

- 18 The range of products that are becoming increasingly unserviceable as the result of software integration is broadening. Included are consumer items such as thermostats, home appliances, automobiles, hot tub controls and cameras.²⁷ Beyond consumer products, key industrial equipment is sometimes impacted in a manner that has strong public interest implications. For example, In the context of the current global health pandemic, respiratory ventilators²⁸ and other medical equipment²⁹ essential for combating COVID-19 are subject to myriad software TPMs which present challenges for healthcare providers and technicians. Public representatives in the United States have responded by calling upon manufacturers of ventilators and related equipment to release information related to circumventing TPMs. These efforts are not only desirable, but necessary for the purposes of utilising all available healthcare resources to assist those in need.³⁰ This urgent and unprecedented situation demonstrates the growing relevance of the right to repair movement as one not only concerned with private consumer rights, but also in safeguarding the public interest.

- 19 Thankfully, the Internet has made it easier for consumers, the public and third-party repairers to share information³¹ and tools which enable modification of computer software for the purposes of repair.³² In the context of COVID-19, repair advocates

[europa.eu/news/en/press-room/20170530IPR76313/making-durable-reparable-goods-for-consumers-and-tackling-planned-obsolescence](https://www.europa.eu/news/en/press-room/20170530IPR76313/making-durable-reparable-goods-for-consumers-and-tackling-planned-obsolescence).

- 27 Claude Thompson, “Right to repair’ your phone’, *Washington Examiner* (8 February 2019) online: <<https://www.washingtonexaminer.com/news/right-to-repair-your-phone>>.
- 28 Paul Detrick, “Hospital Technicians Ignore Copyright Law to Fight COVID-19”, *Reason* (13 April 2020) online: <<https://reason.com/video/hospital-technicians-ignore-copyright-law-to-fight-covid-19/>>.
- 29 The Repair Association, *Device Companies are Cutting Hospitals Out of the Loop*, online: <<https://repair.org/medical>>.
- 30 Ashley Matthews, “Five State Treasurers Call on Manufacturers to Release Ventilator Repair Manuals”, *Pennsylvania Treasury* (14 April 2020) online: <<https://www.patreasury.gov/newsroom/archive/2020/04-14-Call-On-Manufacturers.html>>.
- 31 John Hartley, ‘A Problem of knowledge – Solved?’ in Ian Hargreaves and John Hartley, eds, *The Creative Citizen Unbound: How social media and DIY culture contribute to democracy, communities and the creative economy* (Policy Press, 2016), 29.
- 32 iFixit, *Repair Guides*, online: <<https://www.ifixit.com/Guide>>.

behind *iFixit.com* have been building a library of repair information and resources specifically aimed at assisting the healthcare sector with ventilator repair.³³ These efforts demonstrate that, with or without the cooperation from manufacturers, consumers, citizens, and public representatives are understanding the importance of repair. Central to this movement is the need to find lawful ways to circumvent software TPMs.³⁴

I. How Software TPMs are Hindering Repair

- 20 In principle, TPMs are meant to act as an additional layer of protection by providing copyright owners with greater control over their content. In some cases, however, the existence of software TPMs only becomes apparent when someone attempts to repair or service the product that incorporates them. These less obvious and concealed uses of TPMs can have particularly negative effects on markets, including secondary repair and service markets, and in doing so leave consumers with fewer choices for repair or servicing.³⁵
- 21 There are very few boundaries which delineate software TPMs. These measures can include the use of encryption, authentication, access control, digital watermarking and tamper-resistant hardware.³⁶ Software TPMs can also come in the form of hardware that limits the functionality of software or access given to the user.³⁷ They can also be used to co-verify hardware and software in using system on chip³⁸ functionality in a manner that restricts the larger functioning of a device. One familiar example of this latter technology is a printer that requires the use of

manufacturer-specific ink cartridges to operate.^{39,40} Each of these techniques can mean that the use of third-party components or services will disable the device entirely; requiring the repairer to obtain parts or service directly from the manufacturer. Given that it is possible to circumvent any software TPM with enough resources and skill⁴¹, the above techniques should be more accurately understood as ‘repair-resistant’ software TPMs.

II. Case Study: John Deere Tractors

- 22 Though the list of products incorporating repair-resistant software TPMs is long and continues to grow, one poignant example of the negative impacts of repair-resistant software TPMs is John Deere tractors. Many farmers who ordinarily live a life characterised by self-reliance and independence still practice the art of repair. They do this in defiance of our increasingly “disposable society”, where planned obsolescence dictates much of consumer behaviour.⁴² Unfortunately for farmers, the virtue underlying this ethic is becoming increasingly difficult to practice.
- 23 Farmers are in many ways the original hackers. They have been fabricating, building, rebuilding, tinkering and improvising with equipment for millennia, and this tradition continues.⁴³ Nevertheless, when one thinks of a farm tractor, the object that comes to mind is not particularly “high tech”. Yet, the farm tractors of today are complex systems which rely on integrated computers and software to operate, and John Deere is leading the way.⁴⁴ The tools needed to resolve issues with these modern machines are not found in tool shops or farmers’ workshops anymore,

33 Kevin Purdy, “Five State Treasurers Demand the Right to Repair from Ventilator Makers”, *iFixit* (14 April 2020) online: <<https://www.ifixit.com/News/36899/five-state-treasurers-demand-the-right-to-repair-from-ventilator-makers>>.

34 Thompson (n 27).

35 Geist (n 3) 220.

36 Ian Kerr, ‘Digital Locks and the Automation of Virtue’ in Michael Geist, ed, *In the Public Interest: The Future of Canadian Copyright Law* (Irwin Law, 2005), 273.

37 *Kabushiki Kaisha Sony Computer Entertainment Inc et al v Ball et al*, [2004] EWHC 1738 (UK).

38 Tim Hopes, ‘Hardware/Software Co-verification, an IP Vendors Viewpoint’ (Paper delivered at the Proceedings International Conference on Computer Design, 5-7 October 1998 [unpublished]).

39 *Lexmark International Inc v Static Control Components Inc*, 387 F (3d) 522 (2004) (US).

40 Michael Geist, ‘TPMs’: A perfect storm for consumers’, *MichaelGeist.ca*, (31 January 2005) online: <http://www.michaelgeist.ca/resc/html_bkup/jan312005.html>.

41 *Ibid.*

42 Jeremy Bulow, ‘An Economic Theory of Planned Obsolescence’ (1986) 101 *THE QUARTERLY JOURNAL OF ECONOMICS* 729, 729.

43 ‘Cordless Drill Powers Portable Winch’, *Farm Show Magazine* 43 (July 2019) online: <https://www.farmshow.com/view_issue.php?i_id=314&vol=43&number=4&year=2019>.

44 Motherboard, ‘Tractor Hacking: The Farmers Breaking Big Tech’s Repair Monopoly’, *YOUTUBE*, (1 February 2018) (video) online: <<https://www.youtube.com/watch?v=F8JCh0owT4w>>.

but instead behind a wall of TPMs safeguarding proprietary software.

- 24 The TPMs used in John Deere tractors vary in their type and application, but generally include a central computer connected to an array of electronic sensors. These sensors measure and control a range of functions, including engine temperature, GPS location and hydraulic pressure. The onboard computer (known as the “tECU”) will shut the entire tractor down if it detects a fault.⁴⁵ Problematically, this can occur as the result of a fault in a sensor itself without any underlying mechanical problem.⁴⁶
- 25 John Deere also relies on software integration for diagnostics. In effect, access to the tECU is required in order to determine the underlying mechanical issue that needs to be resolved. Access to the tECU requires both a proprietary cable and software, neither of which are offered to consumers or independent technicians.⁴⁷ Thus, diagnostics which had previously been determined through deductive reasoning and troubleshooting is now information that has become inaccessible.
- 26 Even further still, disabling the tractor’s automatic shut down requires access to the tECU running the proprietary software. Even if a farmer were able to circumvent the TPMs protecting the software, he would also likely need a factory password to effect any changes to the system.⁴⁸ The result is that in many cases a farmer or independent service technician is unable to diagnose or repair a tractor that has become inoperative without access to equipment and proprietary software that is held exclusively by the dealer or manufacturer. This effectively precludes farmers’ ability to conduct their own repairs.
- 27 John Deere tractors also use software TPMs to co-verify or “activate” replacement parts.⁴⁹ Farmers frequently look for used parts to repair their machinery, and indeed used parts are available for modern John Deere tractors.⁵⁰ Nevertheless, installation of these parts without software

activation will render the entire tractor inoperative if the tECU is not accessed to activate them. Much to the dismay of farmers, the result is that they often have to purchase new components from John Deere to then be activated by John Deere’s technicians.⁵¹

- 28 Not surprisingly, the difficulty presented by John Deere’s software TPMs has motivated farmers to establish a thriving grey market for used parts, proprietary connectors and software tools that circumvent software TPMs used by the tractor’s computer system.⁵² Like they always have, farmers are demonstrating their resourcefulness and ingenuity in solving many of the problems created by John Deere’s software by sharing information and circumvention tools. In some cases, farmers are even learning to hack John Deere’s software.⁵³
- 29 Frustration with the obstacles posed by John Deere’s software TPMs led to a group of farmers in the United States to lobby for legislative reform. Farmers became unlikely allies with technology-focused advocacy groups such as the Electronic Frontier Foundation (the “EFF”) to lobby for exceptions to US *Digital Millennium Copyright Act* (“DMCA”) that prohibit the circumvention of TPMs.⁵⁴ After much public and media attention, in 2015 the United States Librarian of Congress provided clarification of the anti-circumvention provisions of the DMCA to allow circumvention of software TPMs used on tractors for the purposes of repair.⁵⁵ Despite this positive development, it was not long after this ruling before farmers were reminded of the robust control held

<<https://www.deere.ca/en/parts-and-service/parts/remanufactured/>>.

45 Kyle Wiens, ‘New High-Tech Farm Equipment is a Nightmare for Farmers’, *Wired* (5 February 2015) online: <<https://www.wired.com/2015/02/new-high-tech-farm-equipment-nightmare-farmers/>>.

46 Ibid.

47 Motherboard (n 44).

48 Wiens (n 45).

49 Motherboard (n 44).

50 John Deere, ‘Remanufactured Parts & Components’, online:

51 Motherboard (n 44).

52 Jason Bloomberg, ‘John Deere’s Digital Transformation Runs Afoul of Right-to-Repair Movement’, *FORBES* (30 April 2017) online: <<https://www.forbes.com/sites/jasonbloomberg/2017/04/30/john-deeres-digital-transformation-runs-afoul-of-right-to-repair-movement/#7b08bb6d5ab9>>.

53 Motherboard (n 44).

54 Kit Walsh, ‘John Deere Really Doesn’t Want You to Own That Tractor’, *EFF* (20 December 2016) online: <<https://www.eff.org/deeplinks/2016/12/john-deere-really-doesnt-want-you-own-tractor>>.

55 US, Library of Congress, *Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies*, 37 CFR 201, Docket No 2014-07 (effective 28 October 2015).

by John Deere when it amended the terms of service associated with its software to prohibit any form of modification.⁵⁶

- 30 The malleability of the terms of service associated with John Deere's tractors draws attention to the broader issue of the vulnerability of copyright exceptions and limitations to contractual override.⁵⁷ The increased use of software TPMs in "smart" products which feature computerisation presents a new forum for rightsholders to rely on freedom of contract to augment the copyright balance as set by legislators. To this end, John Deere tractors are likely an early example of how easily amended software terms of service can be used to undermine both traditional notions of private property ownership as well as legislative attempts to further the public interest dimensions of the copyright system.
- 31 Despite these challenges, farmers have continued to find ways to circumvent John Deere's software to carry out repairs. In line with these efforts, farmers have also established *farmhack.org*, a global community of farmers that share tools and resources for building and modifying their equipment.⁵⁸ Despite the 2015 amendments to the DMCA, the legality of sharing or distributing the means of circumventing John Deere's software TPMs remains murky. As will be discussed in the following Part, the legality of both circumventing software TPMs and distributing the means of doing so can violate various copyright laws in a number of different jurisdictions, including the EU. This legal framework needs more careful consideration in light of the larger objectives of copyright policy and the impact on the secondary repair market.

C. The Development of Anti-Circumvention Law

- 32 The history of the law enabling TPMs is not entirely linear or straightforward. Through a combination of international agreements, domestic legislation and private ordering mechanisms used by manufacturers, TPMs and their circumvention can be governed by a variety of legal instruments. As their name would

suggest, legal protection for TPMs came about as the effect of rapid changes in technological development in the 1980s and 1990s which brought about the advent of digital property.⁵⁹ Indeed, this interdependent relationship between TPMs and technological development has not changed. As evidenced by their use in John Deere tractors, the increasing sophistication of everyday products and the increasing reliance on computerisation has been the impetus for a variety of new and unforeseen uses for TPMs.

- 33 The law surrounding TPMs is best described as "anti-circumvention law" because these legislative provisions principally determine the consequences and lawfulness of TPM circumvention and related activities. Surprisingly, there are comparatively few legal boundaries setting out the limits of what constitutes a TPM in the first place. This ambiguity coupled with the rigorous attempts to curb circumvention of TPMs have created concern and controversy among lawmakers and the general public since their inception. Perhaps predictably, this controversy has generally coalesced around questions of how to appropriately balance the interests of rightsholders, users and other relevant industries.
- 34 This Part will provide an overview of the origins and development of anti-circumvention law, including the larger international framework. Though the implementation of this framework in the European Union will be more thoroughly canvassed in Part D, the surrounding international framework provides important context for how and why software TPMs are able to be used as impediments to repair. It should be clarified at the outset that, though the framework governing software TPMs in the European Union predates the international treaties addressing TPMs, the co-existence of these regimes creates for additional uncertainty that must be addressed in the context of TPM circumvention for the purposes of repair. Moreover, in addressing this international framework, the impact of the United States' approach to anti-circumvention law will be assessed to demonstrate its impact on manufacturing processes for products that reach global markets. As will be demonstrated, this latter subject is particularly relevant for the software TPM approach utilised in John Deere tractors. Overall, this chapter will seek to establish that the level of protection afforded to TPMs protecting software in the European Union is both high and inflexible. In particular, its lack of exceptions or limitations and its prohibition on the circulation of the means of circumvention present significant challenges for those seeking the ability to repair their equipment, including John Deere tractors.

56 Adam Wernick, 'The 'right to repair' movements wants you to be able to fix your own stuff', PUBLIC RADIO INTERNATIONAL (24 December 2018) online: <<https://www.pri.org/stories/2018-12-24/right-repair-movement-wants-you-be-able-fix-your-own-stuff>>.

57 Lucie Guibault, 'Copyright Limitations and Contracts: An Analysis of the Contractual Overridability of Limitations on Copyright' (Kluwer Law International, 2002), 207.

58 Farm Hack, Tools, online: <<https://farmhack.org/tools>>.

59 Kerr (n 36) 265.

I. The Pre-World Copyright Treaty Era

- 35 Most people born before 1990 have experience placing a piece of adhesive tape over two square holes on the bottom of an audio cassette to enable it to be used for recording new music. Without this piece of tape, the shape of the holes on the cassette prevented it from being used to allow for recording over the existing audio. This circumvention technique allowed a cassette with music released by an undesirable artist to be reused to create a ‘mix tape’; often by recording newly-released songs from the radio.⁶⁰ In its most simple of forms, these holes on cassette tapes were the type of TPMs contemporary to the era in which much of the legal regime surrounding anti-circumvention was established. This period of technological development was also marked by the landmark United States decision in *Sony v Betamax*⁶¹, which was concerned with so-called “dual use” technologies and blank physical media for recording. It is within this technological paradigm and context that modern anti-circumvention laws find their genesis.
- 36 It is thus perhaps not surprising that the earliest forms of legislative intervention to regulate TPMs were focused in copy-control technologies.⁶² As will be discussed in the proceeding Chapter, technical protections applied to software in the European Union were an exception among these early movements. By contrast, the larger international momentum behind anti-circumvention law was not particularly concerned with software. For example, early iterations of the UK’s 1988 *Copyright, Designs and Patents Act* at section 296 restricted circumvention of copy-protection incorporated into physical media where it is used to make “infringing copies”⁶³. Similarly, in the United States, restrictions were put in place in 1993 to prohibit circumvention or alteration of Serial Copyright Management Systems, which were utilised to restrict copying of digital

60 John Kelly, ‘Party like its 1989: What should you do with all those old cassette mix tapes?’, WASHINGTON POST (25 February 2018) online: <https://www.washingtonpost.com/local/party-like-its-1989-what-should-you-do-with-all-those-old-cassette-mix-tapes/2018/02/25/d0cfef4e-1a2c-11e8-b2d9-08e748f892c0_story.html?noredirect=on>.

61 *Sony Corporation of America et al v Universal City Studios Inc et al*, 464 US 417; 104 S Ct 774 (1984) (US).

62 Ian Brown, ‘The evolution of anti-circumvention law’ (2006) 20:3 INTERNATIONAL REVIEW OF LAW, COMPUTERS & TECHNOLOGY 239, 240.

63 *Copyright, Designs and Patents Act*, 1988 c 48 [United Kingdom] at 296 [CDPA].

audio tapes.⁶⁴ In accordance with the increasing digitalisation of media throughout the early 1990s, efforts began to coalesce among countries to establish formal and unified recognition for anti-circumvention protections at the international level, with copy-control technologies at front of mind.

II. WIPO and the Emergence of an International Anti-Circumvention Regime

- 37 By the mid-1990s, the means to access and reproduce protected works had become within the reach of most consumers.⁶⁵ Though long-standing manual copying techniques similar to that used to create a mix tape had allowed for relatively simple reproduction and distribution, these processes were time intensive and sometimes difficult. Widespread digitisation of creative works meant that an increasing number of media formats were now easily copied on a relatively large scale and at low cost.⁶⁶ Concurrently, extensive WIPO negotiations began to take shape which would later establish the 1996 World Copyright Treaty (the “WCT”) and the WIPO Performances and Phonograms Treaty (“WPPT”).⁶⁷ These negotiations drew reference to earlier discussions surrounding anti-circumvention, including those which took place during the drafting of the 1989 WIPO Model Provisions for Legislation in the Field of Copyright.⁶⁸ For industry representatives and lawmakers among the international community, the time was ripe for including protections for TPMs as part of the forthcoming world copyright regime.
- 38 The WIPO Committee of Experts of the Nice Union was responsible for steering the negotiations leading up to the WCT and WPPT. The Committee did not envision that TPMs would create new substantive intellectual property rights. Rather, TPMs were regarded as a vehicle for aiding in the protection,

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

65 Simon Stokes, *Digital copyright: law and practice* (Hart Publishing, 2014), 11.

66 Pamela Samuelson, ‘The New Economy and information technology policy’ in Jeffrey A Frankel and Peter R Orszag, eds, *Economic Policy During the 1990s* (MIT Press, 2002), 17.

67 Jorg Reinbothe & Silke von Lewinski, *The WIPO Treaties 1996: The WIPO Copyright Treaty and The WIPO Performances and Phonograms Treaty Commentary and Legal Analysis* (Tottel Publishing, 2002), 139.

68 Brown (n 62) 239.

exercise and enforcement of existing rights as they applied to the newly-established digital environment.⁶⁹ As will be demonstrated further in the proceeding Chapters, this distinction is important in relation to the myriad uses for repair-resistant TPMs.

- 39 The role of TPMs as addressing rapid technological change is further evidenced by the somewhat nebulous notion of a technological “measure”; leaving open the possibility of various tools, mechanisms or approaches which could be taken to protect copyrighted works. The ambiguity in this concept lives on to this day. The precise definition of what constitutes such a “measure” under many domestic legislative legal regimes remains undefined.⁷⁰⁷¹ Therefore, from the outset, legal protection for TPMs has been focused on the consequences of circumvention rather than the nature or technology used to implement the protection measure itself.
- 40 The WIPO negotiations largely took shape around whether the circumvention of TPMs should require knowledge or infringing intent of the person performing the circumvention. The United States advocated strongly for no such requirement, and other parties (including the European Union), advocated for it. In the end, the final text agreed upon was adopted largely from the South African proposal which reflected mostly the European position.⁷² Notably, Article 11 provides:

“Contracting Parties shall provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by authors in connection with the exercise of their rights under this Treaty or the Berne Convention and that restrict acts, in respect of their works, which are not authorized by the authors concerned or permitted by law.”

- 41 Article 11 of the WCT was, except for select free trade agreements⁷³, the first formal protection for TPMs recognised by any international agreement. An analogous provision is found at Article 18 of the

WPPT. The protections for TPMs found in these treaties are distinct from the others in that they constitute wholly new mechanisms⁷⁴ within the international copyright framework as opposed to an extenuation of existing norms elucidated in the *Berne Convention*.

- 42 The final text of the WCT’s Article 11 was sufficiently flexible to allow for member states to adopt national legislation that was in conformity with varying domestic intellectual property strategies. It therefore serves as the low water mark for anti-circumvention for two reasons: states are left on their own to define both “adequate legal protection” and “effective” technological measures; and it sets only minimum standards and thereby leaves states the option to domestically legislate more narrow or broad exceptions to the prohibition on circumvention. As will be demonstrated in the proceeding chapters and sections, these two aspects have allowed for divergent approaches and inconsistencies in anti-circumvention law more generally.

III. The United States’ Impact on the Use of Software TPMs by Manufacturers

- 43 In some cases, the underlying policy reasons for adopting a particular legislative measure can be as influential on its manner of implementation as the law itself. This was certainly the case for the United States’ expansive approach to anti-circumvention during the WIPO negotiations leading up to the WCT and WPPT. These negotiations served as an opportunity for the United States to put forward an approach to TPMs that had percolated vis-à-vis domestic policy proposals in the mid-1990s. As will be further discussed in this section, the US view of anti-circumvention law has impacted various free-trade agreements⁷⁵⁷⁶ and shaped the laws of various countries⁷⁷⁷⁸ since the WCT and WPPT were concluded. This more absolute approach to anti-

69 Mihály Ficsor, *The Law of Copyright and the Internet: The 1996 WIPO Treaties, their Interpretation and Implementation* (Oxford University Press, 2002), 544.

70 *Copyright Act*, RSC 1985, c C-42 [Canada], 41.

71 CDPA (n 63) 296ZF(1).

72 Ficsor (n 69) 544.

73 *North American Free Trade Agreement Between the Government of Canada, the Government of Mexico and the Government of the United States*, 17 December 1992, Can TS 1994 No 2, 32 ILM 289 (entered into force 1 January 1994), 1707 [NAFTA].

74 Ficsor (n 69) 544.

75 *Anti-Counterfeiting Trade Agreement*, 15 April 2011, (not in force) [ACTA].

76 *Trans-Pacific Partnership Agreement*, 4 February 2016, (not in force) [TPP].

77 Madison Cartwright, ‘Preferential trade agreements and power asymmetries: the case of technological protection measures in Australia’ (2018) 10 THE PACIFIC REVIEW 1, 2.

78 Wenwei Guan, ‘Copyright Anti-Circumvention & Free Trade’ (2018) 52 JOURNAL OF WORLD TRADE 257, 265.

circumvention law has also enabled manufacturers to incorporate TPM protections in their product designs which have far-reaching effects for consumers globally, including within the European Union. With these considerations in mind, the broader impact of the United States' approach to anti-circumvention law must be considered in conjunction with an assessment of the appropriate framework in the EU.

44 The US policy proposals that influenced its negotiating agenda during the WIPO negotiations came about as the result of the Clinton Administration's commissioning of the *Intellectual Property and the National Information Infrastructure Report* (the "NII Report") in 1995.⁷⁹ The NII Report was the impetus for the United States' desire to ensure that every type of work could be protected technologically and that any attempt to circumvent those protections would be made illegal.⁸⁰ As the NII Report was focused largely on protecting copyright owners and the content industry within the United States, digital technology was viewed as an explicit "threat"⁸¹ and called for swift and strong legislative intervention -- technological controls on products were key to this strategy.

45 Shaped largely by a hostile view of the digital environment, the US approach to TPMs was to exempt TPMs from recognised exceptions and limitations to copyright and to enact generally broad measures to prohibit circumvention. Arguably, this approach created a *sui generis* right against circumvention that is divorced from the larger copyright framework. Though the United States was not successful in incorporating this approach into the WCT and WPPT frameworks, its particularly rightsholder-centric and *sui generis* view of anti-circumvention law has shaped its domestic approach to TPMs. This view is exemplified most poignantly by the US' legal framework for TPMs found in the DMCA.

46 For the United States, the DMCA was a major milestone in moving its copyright law framework into the digital environment. In 1998, when the DMCA was enacted, it was described as a comprehensive digital copyright bill that would criminalise the "circumvention of technologies that secure digital

copies of software, music and videos as literary works."⁸² The addition of the DMCA's section 1201 made it both illegal to circumvent TPMs and to traffic in circumvention devices.⁸³ Though many anti-circumvention regimes prohibit these acts, what made the overall approach in the DMCA distinct from the WCT and WPPT is the apparent extension of TPM protections any such mechanisms which may control "access" to a work.⁸⁴ This approach stands in contrast to the WCT and WPPT's notion of a TPM, which is to prevent acts which are not 'permitted by law'. In the years since its enactment, the "access control" interpretation of the DMCA's section 1201 has been the subject of considerable debate among academic scholars⁸⁵ and uncertainty remains throughout US jurisprudence.⁸⁶

47 Proponents of the "right of access" theory generally focus their attention on interpretations of the DMCA's section 1201 in the context of neighbouring provisions. In comparison to the WCT's Article 11, which calls for protection of measures that are used "in connection with the exercise of their rights under this Treaty or the Berne Convention..."⁸⁷, the DMCA's section 1201(a) prohibits circumvention of a TPM that "effectively controls access to a work protected under this title."⁸⁸ In comparing the language of these two provisions, the language in the DMCA suggests that the prohibition on access may not require the existence of any underlying copyright. Skeptics of the "access right" theory point to the fact that accessibility to works has always been effectively controlled and managed through myriad tools within copyright regimes and that TPMs do not provide any substantive change, but rather an expansion of existing power held by

79 US, Information Infrastructure Task Force, *Intellectual Property and the National Information Infrastructure: The Report of the Working Group on Intellectual Property Rights* (US Government Printing Office, 1995) [NII Report].

80 Pamela Samuelson, 'The U.S. Digital Agenda at WIPO' (1997) 37 VA J INTL L 369, 381.

81 Robert Arthur, 'Federal Circuit v. Ninth Circuit: A Split over the Conflicting Approaches to DMCA Section 1201' (2013) 17 MARQ INTELL PROP L REV 265, 267.

82 John Haubenreich, 'The iPhone and the DMCA: Locking the Hands of Consumers' (2008) 61 VAN L REV 1507, 1514.

83 Arthur (n 81) 268.

84 Timothy Lee, 'Circumventing Competition: The Perverse Consequences of the Digital Millennium Copyright Act' (2006) 564 CATO INSTITUTE: POLICY ANALYSIS, 8.

85 Thomas Heide, 'Copyright in the EU and U.S.: What Access-Right' (2001) 48 J OF THE COPYRIGHT SOCIETY OF THE U.S.A. 363, 363.

86 *Chamberlain Group Inc v Skylink Technologies Inc*, 381 F (3d) 1178 (2004) (US).

87 *World Intellectual Property Organization Copyright Treaty*, 20 December 1996, 2186 UNTS 38542 (entered into force 6 March 2002), 11 [WCT].

88 DMCA (n 64) 1201(a).

copyright owners.⁸⁹ To a certain degree, this view is supported by a decision at the District Court level which affirmed the right of copyright owners to “control access to copyrighted materials”⁹⁰ outside of the context of TPMs.

- 48 Leaving this debate aside for the time being, the advent of an access right is important within the context of US anti-circumvention law because exceptions to copyright (such as fair use) do not guarantee access to a work for the purposes of carrying out a permitted act under copyright law.⁹¹ Under an “access control” framework, the circumvention of the measure is prohibited even in cases where the reason for circumvention bears no relevance to copyright. Therefore, opponents of the ‘access right’ theory view the legal standard for violating this right not as copyright infringement, but rather the mere act of circumvention.⁹² Moreover, opponents of the ‘access right’ theory generally view infringement of this right as a distinct cause of action which is divorced from any of the defences enumerated elsewhere in the DMCA framework.⁹³
- 49 It is not all doom and gloom for fair use advocates in the United States, however. Importantly, the DMCA’s section 1201(c) contains a release valve whereby the Librarian of Congress is to consider the anti-circumvention rule’s impact on a variety of uses for works that mirror the US fair use framework⁹⁴, including education, criticism, parody and review.⁹⁵ Under this framework, the Librarian of Congress is to hold proceedings every three years⁹⁶ wherein it determines an enumerates exceptions to the

prohibition on circumvention. These rulemaking proceedings have occurred on several occasions since the DMCA’s enactment, including in 2015 and 2018. The Librarian of Congress review mechanism is an essential part of the anti-circumvention framework in the United States. As will be discussed further in the proceeding Chapter, no such mechanism exists in the European Union and this poses significant challenges for introducing new exceptions that would enable circumvention of repair-resistant software TPMs.

- 50 Most poignant for this larger analysis, however, is the fact that the DMCA’s “access control” treatment of anti-circumvention law enables new approaches to product design where access to integrated software is legally prohibited. The effect of such access-control TPMs is that manufacturers are increasingly able to deny consumers the ability to interact with the inner-workings of their products. As seen in the case of John Deere tractors, this can have profound implications for end-users.
- 51 The review by the Librarian of Congress offers some relief in the context of the United States market, however, many software-integrated products originating from the United States reach foreign markets and the consequences of repair-resistant software TPMs are externalised. As will be discussed, the European Union is without a legislative mechanism similar to the Librarian of Congress’ ruling procedure. With many of the world’s most successful and far-reaching technology companies based in the United States are designing their products under the DMCA framework, European consumers are ultimately affected by this regime.
- 52 Beyond product design, the effects of the access control model from TPMs can have direct legal effects in the EU. History shows us that the United States is willing to apply the DMCA extraterritorially in certain cases. While the efficacy of these applications of the DMCA have been questioned on a number of grounds, there is little reason to believe that circumvention of software TPMs in the EU would not attract similar scrutiny from U.S. law enforcement; particularly where EU-born means of circumvention are made available in the U.S. market.⁹⁷ Though the public international law dimensions of the DMCA’s extraterritorial application is beyond the scope of this analysis, it exemplifies the very real impacts of the access control conceptualisation of TPMs on foreign markets, including the EU. Therefore, the DMCA approach to TPMs simply cannot be ignored in assessing the appropriate anti-circumvention framework for the European Union.

89 Heide (n 85) 381.

90 *Los Angeles Times v Free Republic*, 56 US PQ (2d) 1862 (CD Cal 2000); 29 Med L Rptr 1028 (2000) (US), 67.

91 Fiscor (n 69) 551.

92 Pamela Samuelson, ‘Intellectual Property and the Digital Economy: Why the Anti-Circumvention Regulations Need to be Revised’ (1999) 14 BERKELEY TECHNOLOGY LAW JOURNAL 519, 543.

93 Efroni Zohar, ‘A momentary lapse of reason: digital copyright, the DMCA and a dose of common sense’ (2005) 28 COLUMBIA JOURNAL OF LAW AND THE ARTS 249, 294.

94 Mark Gray, ‘New Rules for a New Decade: Improving the Copyright Office’s Anti-Circumvention Rulemakings’ (2014) 29 BERKELEY TECHNOLOGY LAW JOURNAL 759 at 762.

95 DMCA (n 64) 1201(c).

96 Haubenreich (n 82) 1510.

97 Adam Fuller, ‘Extraterritorial Implications of the Digital Millennium Copyright Act’ (2003) 35 CASE WESTERN RESERVE JOURNAL OF INTERNATIONAL LAW Re J Int’l L 89.

D. The European Approach to Anti-Circumvention

- 53 The European Union does not possess a single, Union-wide copyright regime.⁹⁸ Instead, it has instituted a patchwork of Directives and Regulations which addresses a variety of subject matters, and some of which touch upon copyright.⁹⁹ This stands in contrast to most unitary and federal states in the international community which commonly have a single source of legislative authority for copyright. In addition, EU copyright legislation must be implemented by its member states to be given effect. For this reason, anti-circumvention law in the European Union is both fragmented by subject-matter and varying in its implementation across various member states.
- 54 With the above caveats aside, it could be said that on the one hand, the European Union’s approach to anti-circumvention law mirrors most closely the terms of the WCT and WPPT. On the other hand, however, the European Union’s TPM framework predates those agreements and is more onerous; particularly in the case of software. This Chapter will seek to reconcile these two aspects of anti-circumvention law in the European Union. The distinct and inconsequential status given to the Directive 91/250/EEC (the “Software Directive”) will be explored with attention given to its more restrictive prohibition on the circumvention of TPMs. Overall, it will be demonstrated that the Software Directive’s broad conceptualisation of a “technical measure”, lack of exceptions and prohibition on circulating the means of circumvention collectively act as strong impediments to the repair of software-integrated products in the European Union.

I. The Bifurcation of EU Anti-Circumvention Law

- 55 The European approach to anti-circumvention law is bifurcated in accordance with the subject matter of the protected work. As opposed to the United States’ DMCA framework, TPMs protecting computer programs in Europe are governed by the Software Directive¹⁰⁰, and TPMs protecting all other types of

copyright are governed by the InfoSoc Directive.¹⁰¹ The reason for this bifurcated approach is less a matter of policy than it is a function of history. The Software Directive of 1991 was both the first harmonising Directive in the field of copyright¹⁰² and the first to address anti-circumvention. This Directive, which sought primarily to extend copyright protection to computer programs, predates the WCT and WPPT by several years. As elaborated upon in Part C, it was this latter international framework that established the more comprehensive approach to TPMs and their circumvention.

- 56 In comparing the two Directives, it must be established that the Software Directive operates, in theory at least, entirely separately from InfoSoc. On this point the CJEU has described the Software Directive as having the character of *lex specialis* in relation to all other Directives, including InfoSoc.¹⁰³ With respect to more specific TPM protections in these Directives, the clear distinction between the two enactments is made even more clear by recital 50 of the InfoSoc Directive, which provides that:

“Such a harmonised legal protection does not affect the specific provisions on protection provided by for Directive 91/250/EEC. In particular, it should not apply to the protection of technological measures used in connection with computer programs, which is exclusively addressed in that Directive...”

- 57 The result of the bifurcation of anti-circumvention law in the EU is that TPMs used to protect computer programs are dealt with in accordance with a distinct legal regime from other copyrighted works. One key consequence of this distinction is the fact that the exceptions and limitations to anti-circumvention under the InfoSoc Directive do not apply to the Software Directive.
- 58 The subject-matter distinction drawn between these two directives is not always straightforward. This is exemplified by the fact that, in some cases, software can be used in conjunction with other works to become “complex works” and therefore fall subject to the InfoSoc Directive’s protections. This was the case in *Nintendo v PC Box*¹⁰⁴, where the CJEU was deciding over circumvention tools used to manipulate TPMs on video game consoles to allow for a broader range of media to be played on them. In deciding the appropriate legal framework to assess

98 Thomas Dreier & P. Bernt Hugenholtz, eds, *Concise European Copyright Law* (Kluwer Law International, 2016), 1.

99 Ana-Maria Marinescu, ‘EU Directives in the Field of Copyright and Related Rights’ (2015) 1 LESIJ – LEX ET SCIENTIA INTERNATIONAL JOURNAL 50, 50.

100 Software Directive (n 7).

101 InfoSoc Directive (n 6).

102 Drier and Hugenholtz (n 98) 237.

103 *UsedSoft GmbH v Oracle International Corp* (C-128/11), EU:C:2012:407; [2013] Bus LR 911, 60-61.

104 *Nintendo Co Ltd and Others v PC Box Srl* (C-355/12) EU:C:2014:25; [2014] EUECJ C-355/12 (CJEU).

these TPMs, the CJEU affirmed that video games constitute complex works which consist of both software and other graphic and sound elements.¹⁰⁵ For the CJEU, the “unique creative value” could not be treated as merely software encryption and therefore the case was decided under the InfoSoc TPM framework.¹⁰⁶ Though the CJEU’s rationale is perhaps understandable, it leaves significant ambiguity. In particular, determining exactly when a complex work’s creative value becomes unique (and therefore subject to the InfoSoc Directive over the Software Directive) is a difficult standard to use for future determinations.

- 59 Just as the complexity or multifaceted nature of a work can muddy its treatment as software, so too can its integration with hardware. The EU’s bifurcated TPM framework is predicated on the assumption that computer programs can be easily distinguished from the hardware and platforms upon which they run. With increasing convergence of content formats, transmission media and platforms, along with more widespread software integration and “smart” products, this distinction has become more tenuous.¹⁰⁷ As is demonstrated by John Deere’s use of TPMs, software can directly govern the functional and utilitarian aspects of products. This fading of the distinction between hardware and software or so-called “softening of hardware” is a feature of ongoing technological advancement and appears likely to continue.¹⁰⁸ It raises the question as to whether John Deere is producing tractors that run on software, or if it is producing software that happens to run on tractors. It therefore calls into question what the “product” actually *is*. As will be further discussed in the following sections, this often-blurry distinction between software and hardware has significant implications for repair-resistant software TPMs in the European Union.¹⁰⁹

II. The EU Software Directive’s TPM Framework

- 60 The impetus for the Software Directive was the European Commission’s 1988 “Green Paper on Copyright and the Challenge of Technology”¹¹⁰ (the “Green Paper”). The Green Paper was largely concerned with piracy, home copying of audio and film recordings and the protection for computer programs.¹¹¹ Given that the market for computer programs in 1988 was in its fast-growing infancy, the European Commission recognised that failure to recognise them as literary works risked fragmenting the internal market. Accordingly, the Green Paper put forward several recommendations for the protection of computer programs; many of which were later incorporated into the Software Directive.¹¹²
- 61 Extending copyright to the realm of software was not without controversy. Similar to the US’ NII Report, the legislative proposal that followed the Green Paper caused for difficult debates and lengthy negotiations to reach a compromise for the protection of computer programs.¹¹³ The crux of this controversy was partially addressed in the Green Paper itself, including a caution against excessive copyright protection for “purely functional industrial designs and computer programs”. The Green Paper also warned that failure to limit protection for these works can amount to “a genuine monopoly, unduly broad in scope and lengthy in duration.”¹¹⁴
- 62 In many ways, the *lex specialis* character of the Software Directive reflects these difficult compromises and debates. Indeed, subsequent Directives have left the Software Directive’s framework intact by placing their own exceptions and limitations from outside the reach of computer programs.¹¹⁵ Regrettably, this means that judicial interpretations of exceptions and limitations on TPM protections under the InfoSoc Directive do not

105 Ibid 23.

106 Nintendo v PC Box (n 104).

107 Irini Stamatoudi & Paul Torremans, eds, *EU Copyright Law: A Commentary* (Edward Elgar Publishing, 2014), 91.

108 Vahid (n 21) 33.

109 Pamela Samuelson, Thomas Vinje & William Cornish, ‘Does copyright protection under the EU Software Directive extend to computer program behaviour, languages and interfaces?’ (2012) 34 EIPR 158, 161.

110 EC, *Green Paper on Copyright and the Challenge of Technology – Copyright Issues Requiring Immediate Action*, (1988), COM (88) 172 (EC, 1998) [*Green Paper*].

111 Ibid 1.6.2.

112 Stamatoudi & Torremans (n 107) 91.

113 Stamatoudi & Torremans (n 107).

114 EC Green Paper on Copyright (n 110) 1.3.5.

115 InfoSoc Directive (n 6) recital 50.

provide much assistance in the case of software.¹¹⁶ Though the CJEU held that manufacturers must be able to show¹¹⁷ that their implementation of TPMs is ‘proportionate’ and ‘do not unreasonably exclude legitimate uses’ in *Nintendo v PC Box*¹¹⁸, such caveats do not apply to software TPMs.¹¹⁹ This inconsequential status of the Software Directive is unfortunate, as such limitations to software TPM protections would be extremely beneficial for providing consumers (including farmers) with access to the means of software TPM circumvention.

63 While the non-applicability of exceptions and limitations to copyright creates inconsistencies between the applicable exceptions, the Software Directive’s framework for TPM’s also creates for inconsistencies in the level of protection. For example, Article 7(1)(c) of the Software Directive prohibits:

“...any act of putting into circulation, or possession for commercial purposes of, **any means the sole intended purpose** of which is to facilitate the unauthorised removal or circumvention of any **technical device** which may have been applied to protect a computer program.”

[Emphasis added]

64 Article 7(1)(c) is the only provision in the Software Directive that directly addresses TPMs. Though the provision itself is brief, it raises a number of questions for analysis. Notably, Article 7(1)(c) does not prohibit the act of circumvention itself, but more specifically, the act of circulating the means of circumvention. This distinction is important and, as will be discussed in the following section, it has significant implications for circumventing repair resistant TPMs.

This distinction also stands in contrast to the clear prohibition on the act of circumvention found in the InfoSoc Directive.¹²⁰

65 Curiously, the Software Directive does not define “technical device”. By contrast, the InfoSoc Directive includes a more thorough and precise definition of ‘technological measure’ found at Article 6(3):

“...‘technological measures’ means any technology, device or component that, in the normal course of its operation, is designed to prevent or restrict acts, in respect of works or other subject-matter, which are not authorised by the rightholder of any copyright or any right related to copyright as provided for by law or the sui generis right provided for in Chapter II of Directive 96/9/EC.”

66 Therefore, the notion of a ‘technical device’ under the Software Directive’s framework remains broader than the ‘technological measure’ conceptualisation under the InfoSoc Directive. All that is required in order to fall subject to protection under the Software Directive is that the technical device ‘protect a program’; regardless of whether it is actually integrated into the program itself.

67 The degree to which the technical measure must be integrated into the software it seeks to protect was clarified somewhat by the UK Court of Chancery’s *Sony v Ball* decision¹²¹. In that case, the Court of Chancery held that the physical chips constituting the random-access memory (“RAM”) of a Sony Playstation were capable of constituting a “technical measure” in the context of “mod chip” installation. The Court affirmed that the technical measure need not be based in the software itself so long as its function is to protect software.

68 The language “any means” appears to be quite broad and suggests that the tool for circumvention need not be restricted to hardware or software. This calls into question whether services or information that provide mere instructions for circumventing would also constitute “means” of circumvention. While not determinative of the issue, the Finnish Supreme Court held in *Adobe Systems*¹²² that instructions for circumventing software protections which prohibited regular updates for unlicensed copies of software did not amount to “means”. Though this decision can be distinguished from the Software Directive somewhat based on distinct wording in the Finnish Copyright Act, the holding nevertheless raises doubt over documentation or instructions

116 Thomas Heide, ‘Copyright, Contract and the Legal Protection of Technological Measures – Not the Old Fashioned Way: Providing a Rationale to the Copyright Exceptions Interface’ (2002-2003) 50 J OF THE COPYRIGHT SOCIETY OF THE U.S.A. 314, 316.

117 Heather Newton, Andrew Moir & Rachel Montagnon, ‘CJEU increases burden on manufacturers of games consoles to prove the unlawfulness of devices circumventing technological protection measures and that their TPMs are proportionate’ (2014) 9 JOURNAL OF INTELLECTUAL PROPERTY LAW & PRACTICE 456, 456.

118 *Nintendo v PC Box* (n 104) 30.

119 Tito Rendas, ‘Lex specialis(sima): video games and technological protection measures in EU copyright law’ (2015) 37 EIPR 39, 39.

120 InfoSoc Directive (n 6) 6(1).

121 *Kabushiki v Ball* (n 37).

122 *Adobe Systems Inc v A Software Distributor* [2004] ECDR (30) 303 (Finish Supreme Court).

falling subject to the anti-circulation provision.

- 69 Finally, the requirement that the means have the “sole intended purpose” to circumvent a technical measure is a much higher standard than the stipulation in the InfoSoc Directive.¹²³ The latter requires only that the device be “primarily designed for the purposes of circumvention”, or are “promoted, advertised or marketed for the purpose of circumvention”.¹²⁴ In comparing these two provisions, it is possible that the Software Directive leaves open the possibility of promoting and advertising the means of circumvention so long as that is the sole intended purpose for such means. On this point, it remains to be seen how the ‘intended purpose’ of the means is actually determined in practice. Unfortunately, there remains a need for caselaw and judicial comment in interpreting the outer limits of this requirement.
- 70 In comparing the overall framework in the Software Directive to the US DMCA, an important distinction must be addressed. Namely, the Software Directive is without any mechanism analogous to the Library of Congress’ review of exemptions under section 1201 of the DMCA. The result is that the framework for circumventing software TPMs in the EU cannot easily respond to technological and societal change. Put in more polemic language, it is fixed in a bygone software paradigm that could not have envisioned the modern uses for software or its integration into everyday products. Moreover, as the Software Directive requires EU member states to effect implementation of its terms, making any changes to this framework through a mandatory review process would be logistically difficult as the application of its framework is legislatively fragmented among member states.
- 71 As a whole, the Software Directive’s exemption from the exceptions to copyright found in the InfoSoc Directive coupled with the lack of a mandatory review provision renders the level of protection afforded to software TPMs in the European Union particularly strong. Though the Software Directive permits independent acts of circumvention, its broad conceptualisation of a ‘technical measure’ combined with the prohibition on the means of circumvention jointly act as a significant impediment for overcoming the impacts of repair-resistant software TPMs.

123 InfoSoc Directive (n 6) 6(2)(c).

124 Stamatoudi and Torremans (n 107) 141.

III. Analysis: Circumventing John Deere’s TPMs in the European Union

- 72 As outlined in Part B, farmers in the United States are challenged to repair their tractors as the result of John Deere’s use of software TPMs. In the same vein, it is worthwhile to assess the hurdles that would be faced by farmers in the European Union. This question is not entirely hypothetical. Though based in the United States, John Deere has a truly global market reach for its tractors and holds the largest market share in Europe.¹²⁵ Tellingly, the software commonly used by American farmers in Nebraska to circumvent the TPMs on their John Deere equipment originates from Ukraine.¹²⁶ While the Right to Repair movement has often coalesced around the John Deere tractor situation in the United States, farmers in the European Union are not immune to the causes of these concerns or the effects of software TPMs. Accordingly, the impediments caused by the use of software TPMs must also be assessed under the EU framework.
- 73 As opposed to the United States’ prohibition on acts of circumvention, the obstacle for farmers in the EU with John Deere equipment is the Software Directives’ prohibition on *circulation of the means* of circumvention. The Software Directive contains no prohibition on farmers in the European Union devising their own solutions for circumventing software TPMs. At first blush, the EU framework may appear to be more permissive than that of the United States, but as will be seen, this is not necessarily the case. Prohibiting circulation of the means of circumvention creates for numerous legal, market and moral implications which will be assessed further in Part E. In such cases where TPMs are rendering crucial operating software or ‘firmware’ beyond reach, the ability for independent technicians to utilise tools and software modifications is essential for their services to have any practical effect.

125 Jim Breen, ‘Tractor sales: Who topped one of Europe’s biggest markets in 2018?’, AGRILAND (10 January 2019) online: <<https://www.agriland.ie/farming-news/tractor-sales-who-topped-one-of-europes-biggest-markets-in-2018/>>.

126 Jason Koebler, ‘Why American Farmers Are Hacking Their Tractors with Ukrainian Firmware’, VICE (21 March 2017) online: <https://www.vice.com/en_us/article/xykkkd/why-american-farmers-are-hacking-their-tractors-with-ukrainian-firmware>.

- 74 The unlawfulness in circulating the means of circumvention is made more prominent by the ways in which John Deere is using TPMs. For this reason, the situation involving farmers and their John Deere tractors requires more than the right to perform individual acts of circumvention. These TPMs are effectively protecting the software that controls the tractor and, by extension, the machine itself. This purely utilitarian dynamic of the software changes the practical significance of the TPM, the barriers it presents and the subject of its protection. Indeed, this was precisely the type of undesirable use for TPMs that was cautioned by the EU’s Green Paper.¹²⁷
- 75 Practically speaking, without the ability to circulate the means of circumvention, farmers may possess a *right* under EU law to circumvent the software TPMs, but they will often not have the *ability* to do so. Though farmers have demonstrated ingenuity and have found creative solutions to problems for millennia, it is hardly reasonable to expect each of them to develop their own means of circumvention. However resourceful and inventive farmers may be in spirit, they must be able to share the benefit of their devised solutions. Therefore, if the policy goals of the Right to Repair movement are to be recognised by anti-circumvention law in the European Union, sharing tools and providing assistance must be part of that framework.

E. The Implications of John Deere’s Repair-Resistant Software TPMs

- 76 Repair-resistant software TPMs are put in place by manufacturers because they are effective. The effect of these protections, however, are far reaching. From the perspective of independent repair and service technicians, John Deere’s software TPMs run the risk of precluding the ability to run a business. Without legal access to the tools to circumvent the TPMs and the ability to offer those means as part of their services, John Deere effectively reserves for itself the entire market for repair and service.
- 77 Alternatively, from an individual consumer perspective, repair-resistant software TPMs blur the lines between ownership and a license to use. If the TPMs protecting software in everyday products and appliances inhibit our ability to do with them as we wish, it raises the question – do we really own our things? Questioning the very nature of ownership in this way is not outlandish or sensational. Indeed, in submissions before the US Librarian of Congress in relation to proposed expansion of law TPM circumvention in 2015, John Deere’s representatives alleged that John Deere tractor owners do not actually own their tractors. Instead, John Deere’s representatives alleged that tractor ‘owners’ receive an “implied licence for the life of the vehicle to operate the vehicle.”¹²⁸ It would seem as though TPMs used in this way are part of a larger transition in the relationship between manufacturers and consumers.
- 78 In diluting the concept of ownership through rigid defence of repair-resistant software TPMs, manufacturers such as John Deere deny individual consumers a portion of their own agency by preventing them from learning, repairing and fixing products that they own. To a certain degree, this automates the individual consumer’s decision-making process in determining the morality of their conduct. Can there be excusable grounds for manipulating the tractor’s tECU software? Ultimately consumers will not be able to make this determination for themselves because the TPM precludes the question from ever arising.
- 79 The following Part provides an overview of these implications from the market or competition perspective as well as the individual owner or consumer perspective. With respect to fair competition in the market, this Part will explore the extent to which John Deere’s use of software TPMs amounts to an abuse of a dominant position by failing to provide an essential facility to independent repair technicians. The essential facility in this regard is the access to the software protected by the TPM. The particulars of this notion will be more thoroughly canvassed in following analysis. Second, from the perspective of individual consumers, this Part will propose that repair-resistant software TPMs deny owners a significant degree of personal agency in choosing when, where and how to repair their own property. They place the moral justification for access to and manipulation of proprietary software outside the realm of decision-making by consumers. In doing so, software TPMs reduce the moral intelligence of consumers by automating the permissibility of their conduct. It will be proposed that this categorical denial of consumers’ moral decision-making vis-à-vis software TPMs has deleterious consequences for society and the objectives of copyright law.
- 80 In sum, it will be contended that the market effects of repair-resistant software TPMs necessitates a review of anti-circumvention policy. Without a malleable and responsive framework analogous to the United States’ Librarian of Congress reviews, the EU’s

¹²⁷ EC Green Paper on Copyright (n 110) 1.3.5.

¹²⁸ Darin Bartholemew, ‘Long Comment Regarding a Proposed Exemption Under 17 USC 1201’ (Submissions on behalf of John Deere before the Librarian of Congress Rulemaking, 2014), online: <https://www.copyright.gov/1201/2015/comments-032715/class%2022/John_Deere_Class22_1201_2014.pdf>.

treatment of software TPMs risks becoming tone deaf to the myriad previously unforeseen ways in which these tools are being used by manufacturers. Should such an opportunity for legislative review occur, the market and moral implications addressed in the following sections should be taken into consideration.

I. Market Implications: The Anti-Competitive Impacts on the Secondary Market

81 Though the legal protection for software TPMs is enshrined in the Software Directive, the market may require protection *from* software TPMs in some instances. The appropriate framework to explore this question is under EU competition law. Unfortunately, an extensive search at the time of writing reveals a paucity of caselaw in the European Union involving a challenge to TPMs or DRM systems as a breach of competition law. While analogous issues arose in *Synstar Computer Services v ICL*¹²⁹ in relation to computer server software and hardware bundling, the proceedings were stayed before reaching the UK competition authorities.¹³⁰ Nevertheless, it is theoretically possible that conduct enabled by software TPMs could run afoul of competition rules.¹³¹ Indeed, John Deere’s software TPM implementation demonstrates that such controls can directly inhibit the ability for owners and independent repair technicians to provide services and activate parts. Though a robust overview of EU competition law is beyond the scope of this analysis, the following is a brief survey of the key EU competition law issues that may apply to John Deere’s use of software TPMs in its products. It must be made clear that the competition law jurisprudence addressing intellectual property is sparse and remains largely unsettled. Nevertheless, the following discussion explores the extent to which John Deere’s use of software TPMs may constitute an abuse of a dominant position in the secondary repair and service market.

82 The legal inquiry surrounding the abuse of a dominant position focuses on the extent to which John Deere is using software TPMs to unfairly stifle competition while being the largest player in the secondary repair and service market. The prohibition on the abusive use of dominance is governed by

Article 102 of the Treaty on the Functioning of the European Union (“TFEU”). That provision states:

“Any **abuse** by one or more undertakings of a **dominant position** within the internal market or in a substantial part of it shall be prohibited as incompatible with the internal market in so far as it may affect trade between Member States.”¹³²

[Bolding and underlining added]

83 It must be borne in mind that all intellectual property rights (“IPRs”), by their monopolistic nature, effectively enable some level of exclusion or protection from competition in a given market. In assessing this apparent paradox, the CJEU has clarified that the mere exercise of exclusive rights under an IPR does not amount to dominance,¹³³ but nevertheless, the ownership of an IPR and dominance may coincide under the right conditions. Further, dominance *per se* is not problematic under competition rules, but only where such dominance is occasioned by ‘abuse’. In this regard, the competition rules do not apply to the exercise of IPRs in and of themselves, but only to the extent that they are used by a dominant undertaking as an ‘instrument of abuse’.¹³⁴

84 The first matter to determine is whether John Deere is in fact a ‘dominant undertaking’ in the context of the secondary repair and service market. The CJEU has defined dominance as “a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition”, and having “...the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of its consumers.”¹³⁵ While in some cases dominance is established through an empirical analysis of market share¹³⁶, a presumption of dominance can also be found where the mere holding of an IPR presents a significant barrier to market entry.

132 Consolidated Version of the Treaty on the Functioning of the European Union, [2008] OJ C 115/47, 102 [TFEU].

133 *Deutsche Grammophon GmbH v Metro-SB-Grossmarkte GmbH* (C-78/70), [1971] ECR 487, [1971] CMLR 631 (CJEU), 16.

134 Steven Anderman and Hedvig Schmidt, *EU Competition Law and Intellectual Property Rights: The Regulation of Innovation* (New York: Oxford University Press, 2011), 6.

135 *United Brands Company and United Brands Continental BV v EC Commission* (C-27/76), [1978] ECR 207; [1978] 1 CMLR 429, 38 (CJEU).

136 Anderman and Schmidt (n 134) 59.

129 *Syndtar Computer Services (UK) Limited v ICL (Sorbus) Ltd.*, [2001] UKCLR 585; [2001] CP Rep 98 (UK).

130 Stokes (n 65) 98.

131 Ibid.

- 85 One example of this dynamic is in the case of spare parts that are protected by design rights. Notably, in *CICRA & Maxicar v Renault*¹³⁷, at issue was the design right for bodywork components of vehicles which had a functional shape and for which there were no substitutes. Manufacturers of ‘aftermarket’ parts could not produce a substitute without infringing on the design right. In assessing dominance, Advocate General Mischo reminded the Court that in such cases where the subject matter of an IPR cannot be substituted, it is ‘beyond doubt’ that the manufacturer holds a dominant position.¹³⁸ Similar reasoning was provided by the Advocate General in *Volvo v Veng*.¹³⁹
- 86 While distinguishable in some respects, John Deere’s software TPMs could be analogised to the design rights over functional automobile components in the above cases. In particular, many of John Deere’s replacement parts cannot be activated (and by extension John Deere equipment cannot be serviced) without first circumventing the software TPMs embedded in the tECU’s operating system. In this respect, there are no substitutable options for repair or replacement which do not encroach upon the IPR underlying the TPM. Though individual and non-commercial acts of circumvention are permitted under the Software Directive, this does not alleviate the larger competition impediments imposed on the secondary repair and service market by the TPMs. Above all, John Deere’s software TPMs prevent effective competition in this market and enable John Deere to act independently of its competitors. Irrespective of the approach taken to establish dominance, the above reasoning suggests that John Deere could be found to hold a dominant position with respect to the secondary repair and service market for its products.
- 87 The second matter of inquiry under Article 102 of the TFEU is to determine whether John Deere is using its software TPMs as an instrument of abuse. This inquiry focuses on whether its actual use of TPMs impairs ‘effective competition’ in the repair and service market.¹⁴⁰ Just as the existence of an IPR does not amount to holding a *prima facie* dominant position, more than mere ownership of the right is required to establish abuse. Nevertheless, the CJEU affirmed in the widely cited *Magill* case that in ‘exceptional circumstances’, the exercise of the exclusive rights provided by IPRs, and refusal to licence those rights, can amount to abusive conduct.¹⁴¹
- 88 In *Magill*, the conduct under consideration was a television broadcasters’ refusal to provide broadcasting listing information protected by copyright to the publisher of a TV guide. Importantly, the broadcasters did not produce a TV guide of their own. Seeking relief, *Magill*, the publisher of the TV guide, sought an order under Article 102 of the TFEU for a compulsory licence of the listing information. The dispute made its way to the CJEU which found that, despite the fact that (generally) the exercise of IPRs cannot in and of themselves be abusive, there are ‘exceptional circumstances’ in which this may be the case.¹⁴² The CJEU found that the necessary ‘exceptional circumstances’ existed on the facts of the case in *Magill* for three reasons: there was no potential substitute to a licence in producing the TV guide; there was no ‘objective justification’ for the refusal of the licence; and thirdly, the broadcasters were ‘reserving for themselves’ the secondary market for weekly television guides.
- 89 The CJEU in *Magill* also built upon the ‘essential facilities’ concept that was established in the earlier decision of *Commercial Solvents*.¹⁴³ At its core, the essential facilities doctrine addresses conduct by a dominant undertaking in denying access to an essential product or service and in doing so, precluding the existence of a downstream or secondary market. In order to satisfy the ‘essential facilities’ framework established in *Magill*, it must be shown that the dominant undertaking: owns an indispensable product or service for a secondary market; holds a *de facto* monopoly; and by refusing to licence the IPR, the undertaking reserves for itself the secondary market by excluding all competition.¹⁴⁴ While the original conceptualisation of the essential facilities doctrine did not contemplate

137 *CICRA et Maxicar v Renault* (C-53/87), [1988] ECR 299. [1990] 4 CMLR (CJEU).

138 *Ibid.*, 54.

139 *AB Volvo v Erik Veng (UK) Ltd* (Case 238/87), [1988] ECR 6039; [1988] ECR 6211 (CJEU).

140 *Nederlandsche Banden-Industrie Michelin v Commission* (C-322/81), [1983] ECR 3461; [1985] 1 CMLR 282 (CJEU).

141 *Radio Telefis Eireann (RTE) and Independent Television Publications Ltd (ITP) v Commission of the European Communities (Magill)* (C-241 and 242/91P), [1995] ECR I-743; [1995] 4 CMLR 718 (CJEU).

142 *Ibid.*, 50.

143 *Istituto Chemioterapico Italiano S.p.A. and Commercial Solvents Corporation v Commission of the European Communities* (C-6 and 7/73), [1974] ECR 223; [1974] 1 CMLR 309 (CJEU).

144 *Anderman and Schmidt* (n 134) 105.

IPRs specifically¹⁴⁵, subsequent caselaw in this area has continued to apply this framework to the intellectual property context.¹⁴⁶

- 90 The essential facilities doctrine seems to be reasonably intuitive upon first reading. Nevertheless, it leaves certain ambiguities with respect to when a product or service will be recognised as an essential facility for *another market* instead of merely being necessary for *another product in the same market*. This distinction is important. Viewed in the context of John Deere’s software TPMs, this ambiguity is given even greater prominence. For example, if it can be argued that access to the software protected by the TPMs is part of the same ‘product’ as the tractor (and therefore within the same market), it may prove difficult to contend that software behind the TPM is an ‘essential facility’ for a *secondary market*. In the alternative, if it is found that access to the tECU’s software is a separate *product or service* which forms an essential facility for the secondary repair market, a finding of abuse may be reached more easily. The result is that, to a large degree, the determination of the essential facilities issue for John Deere’s software TPMs will depend on how the product is defined. Indeed, the ambiguity in this regard addresses the larger question posed in this analysis: what exactly do farmers ‘own’ when they purchase these machines?
- 91 In assessing the above ambiguity, it can be envisioned that John Deere and independent repair technicians would take opposite views on the answer to these questions. Independent repair technicians would presumably allege that the tECU’s software is a diagnostic and repair tool which forms the basis of a distinct service or product from the tractor itself. John Deere, on the other hand, would likely contend that its proprietary software behind the TPMs is part and parcel of the tractor itself and are integral parts of the same product. The debate and resulting ambiguity are in need of further interpretation and clarification by the judiciary and competition authorities; particularly so in light of the increasing integration of hardware and software. John Deere’s use of TPMs points to the fact that the essential facilities doctrine (though capable of extending to IPRs) sometimes struggles with identifying the relevant product and market with precision where hardware and diagnostic software are integrated.
- 92 Operating on the assumption that indeed the tECU software and the tractor itself *are* separate

products in the context of the essential facilities doctrine, access could be compelled by competition authorities on two grounds. First, access to the software is indispensable for independent repair technicians to enter into the secondary repair and service market and there are no reasonable substitutes. Though substitutes may exist in the form of unofficial or hacked software which can be used instead of the proprietary software installed by John Deere, this necessitates unlawful circulation. Secondly, by putting in place these TPMs, John Deere is discriminating between new entrants to the repair and service market and its own service providers for the purposes of eliminating competition. Based on the findings in *Magill* and *IMS*, either of these factors could be influential in a finding of abuse. Even though protections for these TPMs do not amount to abuse *per se*, where independent repair technicians are wholly dependent on the IPR’s subject of protection to conduct their business, dominant undertakings such as John Deere may be required to licence or to provide access.

- 93 In the caselaw following *Magill* and *IMS*, however, some caveats have developed in relation to dominant firms limiting the development of new products. Notably, in the lengthy *Microsoft*¹⁴⁷ decision, the Court of First Instance clarified that the ‘new product’ rule is intended to protect consumers from the suppression of entirely new products or services, and not necessarily those which the dominant firm already offers.¹⁴⁸ Given that the *Microsoft* decision was concerned largely with interoperability as between parallel software products, it can be distinguished somewhat from cases where repair and servicing of software-integrated products is at issue. Nevertheless, the Court of First Instance’s emphasis on the need to *maintain* plural sources of innovation is telling. This calls into question whether the ‘essential facilities’ and ‘new products’ reasoning would apply in cases where a manufacturer is able to preclude any secondary sources of innovation from developing to begin with. Further still, it calls into question whether the reasoning from *Magill* and *IMS* would apply in cases where the competition being allegedly curtailed is not necessarily innovative, but service oriented.
- 94 In any event, while the ability to circumvent TPMs can be conceptually distinguished from the software licencing seen in the above cases, the end-effect on the secondary repair and service market can be the same. Just as the reasoning surrounding the essential facilities doctrine in *Commercial Solvents* and

145 Ian Eagles and Louise Longdin, *Refusals to Licence Intellectual Property: Testing the Limits of Law and Economics* (Hart Publishing, 2011), 153.

146 *IMS Health GmbH & Co OHG v NDC Health GmbH & Co KG (IMS)* (C-418/01), [2004] ECR I-5039, [2004] 4 CMLR 1543 (CJEU).

147 *Microsoft Corp v Commission of the European Communities* (T-201/04) EU:T:2007:289; [2007] ECR II-3601 (CFI) [*Microsoft*].

148 Steven Anderman, “Microsoft v Commission and the interoperability issue”, 30:10 *EIPR* 395, 397.

Magill were broadened to include IPRs, it is equally possible that this reasoning could be extended to the circumvention of software TPMs. At its core, the essential facilities doctrine is concerned with *access*. Where John Deere is able to preclude competition in the secondary repair market, the above reasoning suggests (albeit with some caveats) that John Deere could be found to have abused its dominant position.

II. Moral Implications: The Denial of Agency

- 95 Beyond the effects on fair competition in the market, repair-resistant TPMs can have broader implications for individual owners. In particular, software TPMs used to inhibit repair of complex products and machinery reduces the capacity for individual owners to conduct repairs themselves. Beyond the economic drawbacks of this reality, the denial of owners' agency to perform these repairs themselves brings into focus deeper moral issues. This section contends that the software TPM framework in the European Union does not go far enough in allowing owners to circumvent software TPMs. It will be argued that the prohibition on the circulation of the means of circumvention precludes the ability for independent owners to share knowledge and information that contribute to a larger 'repair culture'. In taking advantage of this legal framework and using TPMs to inhibit repair, the following brief analysis proposes that manufacturers such as John Deere are denying owners individual agency to conduct repairs. This denial of agency undermines a sort of moral intelligence of consumers by predetermining the validity of their conduct. In turn, this ensures technological supremacy which ultimately renders consumers and the broader society more dependent on manufacturers and their systems of distribution.
- 96 The Software Directive's prohibition on the circulation of the means of circumvention is deeply problematic. The 'right' to repair must not be conflated with the ability to do so. As has been addressed in the foregoing chapters and sections, merely allowing circumvention is not enough. The TPM framework in the EU leaves the actual task of circumvention to consumers, even in cases where it is for socially beneficial reasons. Nevertheless, the EU TPM framework is without a requirement for rightsholders to actually *facilitate* circumvention by providing the means to do so.
- 97 The importance of the distinction between the self-help remedy currently available under the Software Directive and a positive duty to facilitate circumvention is difficult to overstate. The status quo means that software TPMs become the default private ordering rule, and circumvention is

permitted only where it is successful. Effectively, this means that only the most technologically sophisticated and inclined consumers can benefit from the rule's exception. Thus, the framework for software TPMs in the EU is not concerned with the ability to circumvent TPMs, but merely makes it 'permissible to try'. The broader moral implications of this are significant.

- 98 The ability to conduct repairs to one's own property is not ordinarily thought to have a deeper moral significance, but it can on a number of levels. After all, every system of property rights must be infused with deeper moral significance in order to survive.¹⁴⁹ Moreover, our relationship to the things around us can have a profound impact on our sense of self. As Martin Heidegger contended in *Being and Time*, understanding the workings of the world around us can enrich our sense of being.¹⁵⁰ By extension, the handling, using or taking care of things provides us with deeper knowledge of ourselves and our relationship to the world. Software TPMs interfere with this relationship by denying the ability to understand the things (and by extension the world) around us. This, in turn, creates a culture of technological dependence and betrays the natural debts we owe to each other and to the world which we have collectively built.¹⁵¹ To be responsible for our world, we must understand how it works -- this must include the ability to share knowledge, tools and understanding.
- 99 Autonomy must not be equated with agency. Though it can be argued that our interaction with repair-proof modern devices relieves us from the burden of understanding their inner workings, it also protects us from failure. This, we may feel, grants autonomy by providing freedom and liberation from the headaches of technology and the toils of manual labour. This view of freedom is both empty and rooted in a consumerist logic that ultimately precludes agency in a world of technological devices.¹⁵² Alternatively, by becoming agents and 'masters of our own stuff', we become not merely those who 'consume', but also those who create, invent, use, participate and find solutions for the benefit of others.¹⁵³ This type of

149 Thomas W Merrill & Henry E Smith, 'The morality of property' (2007) 48 WILLIAM AND MARY LAW REVIEW 1849, 1849.

150 Martin Heidegger, *Being and Time* (Blackwell Publishers, 1962), 98.

151 Matthew Crawford, *Shop Class as Soulcraft: An Inquiry Into the Value of Work* (Penguin, 2009), 205.

152 *Ibid.*

153 *Ibid.*

agency embodies precisely the values that underpin the consequentialist view of copyright and its larger societal objectives. Therefore, albeit with some irony, the antidote to slavish materialism is precisely a better understanding of the material world around us. Yet software TPMs used to prohibit repair and maintenance deny us the ability to exercise these facets of our agency, and by extension, to share our knowledge and understanding for the benefit of everyone.

- 100** Software TPMs also predetermine the morality of consumer conduct. As Professor Lawrence Lessig wrote in *Free Culture Big Media*, “The opposite of a free culture is a ‘permission culture’ – a culture in which creators get to create only with the permission of the powerful, or of creators from the past.”¹⁵⁴ As for ‘culture’, Lessig refers to not only creative and expressive culture that underlays the arts and innovation, but to the relationship between humanity, technology and the law.
- 101** The widespread use of software TPMs which prohibit the ability to repair facilitate this undesirable ‘permission culture’. It is hardly hyperbolic to suggest that on this trajectory, TPMs will eventually become more recognisable for what they permit rather than what they prohibit.¹⁵⁵ Therefore, by predetermining which conduct is acceptable, software TPMs may reduce our ability to act as our own moral agents.¹⁵⁶ Indeed, copyright frameworks have always been shaped by informal norms and notions of fairness regarding the scope of protection and balancing of rights. Software TPMs can disrupt this balance by moving the software and products into which they have been integrated outside of our range of moral decision-making.¹⁵⁷ This undermines the moral intelligence of consumers and creators by denying the opportunity to judge the appropriate relationship between the law, technology and morality.
- 102** Finally, the ultimate power and control held by manufactures through the use of software TPMs creates economic dependence that can in some

respects be described as feudal or ‘neo-colonial’.¹⁵⁸ Despite the conceptual distinction between the ‘thing’ and the ‘work’, software TPMs enable manufacturers to reserve rights and significant control over the property of others. For instance, manufacturers can arbitrarily determine that certain features or entire products are obsolete and require software or hardware updates. They can also render entire products or machinery (as they have in the case of John Deere) inoperative through software controls that cannot be readily or easily circumvented. This guarantees a relationship of almost complete economic dependence. By directly controlling how consumers interact with these products and possessing unilateral control over fees and servicing, legal protection for software TPMs enable manufacturers to defy the logic of consumer protection and act similarly to feudal lords.¹⁵⁹ This can hardly be said to portray an ideal (or even reasonable) balance between owners and users of intellectual property in the 21st century.

- 103** In sum, the moral implications of legal protection for software TPMs are significant. It is unlikely that these profound implications could have been envisioned during the genesis of the Green Paper and the Software Directive. Nevertheless, by denying consumers and copyright users the ability to share knowledge and understanding of the inner workings of these products, this legal regime denies the opportunity to better understand the world. This reduces the ability of individuals to act as their own moral agents in a world increasingly governed by technology and the law that protects it. The framework that supports these tools allows for the morality of conduct to be largely predetermined and creates for a relationship of dependence and control. It ensures that private manufacturers carry on as rule-makers. Protected by the Software Directive as they are, these TPMs enable a form of social control. As policy experts and lawmakers review this legal framework, it is proposed that these broader social and moral implications of software TPMs be reconsidered.

F. Conclusion

- 104** The legal framework for software TPMs in the European Union is problematic. It was established during an era where software and hardware were

¹⁵⁴ Lawrence Lessig, *Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity* (Penguin, 2004), xiv.

¹⁵⁵ Kerr (n 36) 251.

¹⁵⁶ Ibid.

¹⁵⁷ Lametti, ‘How Virtue Ethics Might Help Erase C-32’s Conceptual Incoherence’ in Michael Geist, ed, *In the Public Interest: The Future of Canadian Copyright Law* (Irwin Law, 2005), 334.

¹⁵⁸ Andreas Rahmatian, ‘Neo-Colonial Aspects of Global Intellectual Property Protection’ (2009) 12 THE JOURNAL OF WORLD INTELLECTUAL PROPERTY, 58.

¹⁵⁹ Ibid 59.

conceptually separated as distinct products and markets. With the increase in software integration and ‘onboard computer’ design, many modern devices are beginning to take the backseat to the software that controls them and farm tractors are merely one example. If at one point in time it could be said that John Deere’s tractors ‘run on software’, it is probably more accurate to say that in today’s environment, the software merely happens to ‘run on tractors’. Indeed, this phenomenon is pervasive. The utilitarian and essential nature of the software is such that the effect of protection against acts related to circumvention is much broader than mere copy-protection or object code reproduction that is addressed by the Software Directive. In effect, these software TPMs are like a second set of keys retained by the manufacturer. The *corpus mechanicum* and the *corpus mysticum* are becoming one and the same.

the practical limitations imposed by the size, computing power and capabilities of computers at the time of the EU Software Directive’s enactment can hardly be said to remain in place today. To this end, software TPM law in the European Union is worth revisiting in light of the myriad new uses for which software is being used throughout consumer products and industrial design. Any such legal reforms must strongly take into consideration the growing consumer right to repair as the basis for a lawful exception to the prohibition on the circulation of the means of TPM circumvention.

- 105 The ability for consumers and independent technicians to repair and service products is beneficial on a number of levels. For one, it increases the longevity and service life of various products, which reduces costs for consumers. Second, it reduces waste and obsolescence of otherwise well-performing equipment or products. Third, it creates for a thriving secondary market for repair and service that can spur employment, knowledge-sharing and other social benefits. Overall, the European Union should take seriously the right to repair and should view software TPMs as a hinderance to taking advantage of these social and economic benefits.

- 106 The prohibition on the circulation of the means of software TPM circumvention is problematic for owners because the sharing of information, know-how and tools is essential for the development of an educated and responsible repair culture. As the case of John Deere shows, the choice of repair technician and the ability to use substitute parts can reduce costs and shorten periods where equipment is not operational. For independent repair technicians, the prohibition on the circulation of TPM circumvention means is effectively a roadblock to market access. It restricts the ability to lawfully repair or maintain these machines to the dealer or approved technicians only. This limits the options for consumers while creating significant negative effects on competition. As canvassed in Part E, it may also constitute an abuse of a dominant position by denying an essential facility for the secondary repair and service market.

- 107 The benefits of technological advancement can only truly be realised if individuals can interact with and contribute to the high-tech world that surrounds them. Otherwise, the autonomy provided by ubiquitous and increasingly sophisticated products risks becoming an empty promise that ultimately pacifies and weakens us; our relationship with technology becomes predetermined. Undoubtedly,

Health Data Pools under European Policy and Data Protection Law: Research as a New Efficiency Defence?

by **Giulia Schneider***

Abstract: The increasing employment of artificial intelligence and machine learning in the biomedical sector as well as the growing number of partnerships aimed at pooling together different types of digital health data, stress the importance of an effective regulation and governance of data sharing in the health and life sciences. This paper explores the emerging economic reality of health data pools from the perspective of European Union policy and law.

The goal of the study is to validate the role of the internal market integration objective in the data protection framework of special categories of data, and thus to unveil the alignment of the General Data Protection Regulation's research exemption with the broader policy goals of the Digital Single Market Strategy.

After having described the phenomenon of health data pools as a primary means to conduct research in digital health markets, the study first contextualizes health data sharing practices at European policy level, with specific reference to the Digital Single Market Strategy. Here, both the digital health sector and the free-flow of information are emerging as strategic areas of European intervention.

Against this backdrop, the second section will enquire the regulatory framework regarding the processing of special categories of data for research purposes under the General Data Protection Regulation. As will be demonstrated, this framework partly disavows fundamental rights protection objectives, in order to promote research based on health data and related market objectives.

Keywords: Data sharing; Research; Innovation; Data protection; Digital health

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Recommended citation: Giulia Schneider, Health Data Pools under European Policy and Data Protection Law: Research as a New Efficiency Defence?, 11 (2020) JIPITEC 49 para 1.

A. Introduction and Outline of the Study

1 The increasing employment of artificial intelligence and machine learning in the biomedical sector as well as the growing number of partnerships aimed at pooling together different types of digital health data, stress the importance of an effective regulation and governance of data sharing in the health and life sciences. This paper explores the emerging economic reality of health data pools from the perspective of European Union policy and law. The goal of the study is to validate the role of the internal market integration objective in the data protection framework of special categories of data, and thus to unveil the alignment of the General Data Protection

Regulation's research exemption as a ground for the processing of special categories of data with the broader policy goals of the Digital Single Market Strategy.

2 Innovation in health-related markets, such as the ones of medical devices and pharmaceuticals is growingly occurring through the door of digitisation and datification courses¹. This means that in the

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1 This is well expressed by William Nicholson Price II, 'Black Box Medicine' (2015) 28, 2 Harvard Journal of Law & Technology, 420, 422, affirming that "black-box medicine

algorithm-driven economy highly complex data-sets as well as highly sophisticated analytical techniques are needed in order to achieve innovation in health-related markets².

- 3 Traditional actors in the healthcare setting, such as pharmaceutical companies or public healthcare providers, lack of the needed information-technological expertise. They are thus increasingly looking for the support of big data companies, which own mass amounts of users' data, who have the standard technical infrastructure in order to run more sophisticated experiments and thus provide prompter clinical responses. On the other hand, big data companies entering health markets need the more sophisticated health-related data and the expertise traditional stakeholders in the healthcare sector have.
- 4 As a result of the matching between these different economic interests, the conduction of healthcare research is starting to evolve around a complex architecture, where courses of biomedical innovation are driven by new forms of collaborative networks³ between high-tech companies, and traditional stakeholders in the health sector such as pharmaceutical companies and public health providers⁴. These collaborations' primary goal relates to the sharing of different types of health data.

relies principally on pure information goods: collected data, patterns discovered within that data, and validation of those patterns”.

- 2 The fact that the processing and exploitation of complex datasets is key for the success and commercial value of companies acting in digital markets is stressed by Karl-Heinz Fezer, 'Data Property of the People-An Intrinsic Intellectual Property Law Sui Generis Regarding People's Behavior-generated Informational Data' (2017) *Zeitschrift für Geistiges Eigentum*, 356, 356-357, stating that “in the reality of the market, behaviour-generated informational data represents a tradable commodity and crucial asset in a booming industry in the digitized world”.
- 3 The expression is taken from Luis M. Camarinha-Matos and Hamideh Afsarmanesh, 'Collaborative Networks-Value Creation in a Knowledge Society' in: Kesheng Wang and George L. Kovacs and Michael Wozny and Minglun Fang (eds.), *Knowledge Enterprise: Intelligent Strategies in Product Design, Manufacturing, and Management* (Springer, 2006) 26-40.
- 4 From a more general perspective, not strictly related to the medical sector, the emergence of new collaboration scenarios characterising high technology markets, is well highlighted by Giuseppe Colangelo, *Mercato e cooperazione tecnologica. I contratti di patent pooling* (Giuffrè- Quaderni di Aida, 2008) 32 ff.

These sharing practices are giving rise to outright “health data ecosystems”⁵.

- 5 Digital health data represent a highly scientifically valuable asset, the accessibility and the processing of which is ever more becoming essential for research and market innovation purposes in the field of digital health. Economic advancements in this sector are in turn believed to promisingly heighten the standard of health overall enjoyed.
- 6 Health data availability is indeed believed to improve and fasten the design of digital health products, in terms of optimisation and personalisation of the manufacturing processes and with related gains in terms of quality of the resulting products⁶.
- 7 In these regards, according to a growing strand of the literature, regulatory incentives and a correspondent legislative action are needed in order to advance research and innovation in the field of health through the aggregation of differently owned datasets⁷.

5 In this regard, some strand of the literature has referred to “health data ecosystems” in order to describe the “technical and social arrangements underpinning the environments in which health data is generated, analysed, shared and used”. Sonja Marjanovic and Ioana Ghiga-Miaoqing Yang and Anna Knack, 'Understanding Value in Health Data Ecosystems-A Review of Current Evidence and Ways Forward' (Rand, 2017) 1 online available at <https://www.rand.org/pubs/research_reports/RR1972.html>. Emphasis added. Similarly, also Effy Vayena and Alessandro Blasimme, 'Biomedical Big Data: New Models of Control over Access, Use and Governance' (2017) 14 *Bioethical Enquiry*, 501, 503, where the Authors highlight “the interdependence of the actors and processes that rely on the production and circulation of data as a key resource for their respective activities”.

6 Björn Lindqvist 'Competition and Data Pools' (2018) *Journal of European Consumer and Market Law*, 146, 147-148.

7 Arti K. Rai, 'Risk Regulation and Innovation: the Case of Rights-Encumbered Biomedical Data Silos' (2017) 92, 4 *Notre Dame Law Review*, 101 ff.; Rebecca S. Eisenberg and Arti K. Rai, 'Harnessing and Sharing the Benefits of State-Sponsored Research: Intellectual Property Rights and Data Sharing in California Stem's Cell Initiative' (2006) 21 *Berkeley Technology Law Journal*, 1187, 1196-1199. Against this backdrop, the proposed legal incentives are both of private nature, as the establishment of a right to property over health data and the creation of public funders resource creation exercising informal or formal regulatory power to promote data pooling. See, e.g., Jorge L. Contreras, 'Leviathan in the Commons: Biomedical Data and the State' in: Katherine J. Strandburg- Michael J. Madison- Brett M. Frischmann (ed.), *Governing Medical Knowledge Commons* (Cambridge University Press, 2017) 9-18.

- 8 The particularly sensitive nature of the data being shared in the course of digital health research projects renders innovation driven by health data a highly challenging regulatory matter. Innovation and broader public health gains, respectively linked to businesses' fundamental rights to conduct business and to patients' fundamental right to health, need to be carefully outweighed against data protection and discrimination concerns, equally protected as fundamental rights within the European Union.
- 9 Under these premises, the first part of the study theoretically assesses pooling practices as a means of concentrating high-technology resources and stirring innovation in the life sciences sector. In these regards, data pools are considered an evolution of patent pools in the digital economy.
- 10 At a European policy level, health data pools for research purposes are strongly promoted within the Digital Single Market Strategy, being related to both the digital health sector and the free-flow of information initiative.
- 11 Against this backdrop, the second section will enquire the regulatory framework regarding the processing of special categories of data for research purposes under the General Data Protection Regulation. A careful examination of the research exemption under arts. 9(2) lett. j); 5(1) lett. b); 6(4) and 89 GDPR applicable to health data as special categories of data reveals that data-driven health research activities are enabled and promoted under the reformed European data protection law.
- 13 As a result of the digitisation and datification of health research assets, it seems that the "thicket" problem has come to extend well beyond the patent protection of final products and is increasingly affecting the research valuable information that stands behind final products. Such information has become an increasingly strategic asset in the dynamics of competition in the pharmaceutical sector and has been thus progressively encumbered with property-based rights¹⁰. This has triggered the need to expand the range of protection tools employed by originators involved in health research endeavours.
- 14 In addition to trade secret protection and regulatory exclusivities traditionally guarding clinical trials data, also copyright and database protection are emerging as important instruments for shielding collected and processed health data, as well as automatically-generated health inferences and predictions¹¹. Along these lines, also the technological infrastructure employed for the processing and the generation of such data finds legal protection under both patent and copyright regimes over software¹².
- 15 These kinds of information-based protections insisting over digital health data all share the underlying function of protecting digital businesses' competitive advantage deriving from their investments in the collection and production of information. Through the above-mentioned intellectual property tools, and through their *direct* or *indirect* secrecy outcomes, companies' valuable R&D information is gradually shielded from the

B. The Problem of Data Thickets in Digital Health Research

- 12 Traditionally, in the pharmaceutical sector, "patent thickets"⁸, consisting in a bundle of different and intersecting property rights over technology assets, have been regarded as one of the main causes of the freezing of socially-valuable down-stream innovation⁹.

8 For a general assessment of the issue, Carl Shapiro, 'Navigating the Patent Thicket: Cross-Licences, Patent Pools and Standard Setting' in: Adam B. Jaffe, Josh Lerner and Scott Stern, *Innovation Policy and the Economy*, vol. 1 (MIT Press 2001)119 ff. See also Jonathan Barnett, 'From Patent Thickets to Patent Networks: the Legal Infrastructure of the Digital Economy' (2014) *Jurimetrics*, 55 ff., arguing that patent pools and other cross-licensing structures overcome problems of patent thickets and related inefficiencies.

9 Michael A. Heller and Rebecca S. Eisenberg, 'Can Patents Deter Innovation? The Anticommons in Biomedical Research' (1998) 20 *Science* 698; Arti K. Rai, 'Fostering

Cumulative Innovation in the Biopharmaceutical Industry: The Role of Patents and Antitrust' (2001) 16 *Berkeley Technology Law Journal* 813. Talking about 'blocking patents' also Robert Merges, 'Intellectual Property Rights and Bargaining Breakdown: The Case of Blocking Patents' (1994) 62 *Tennessee Law Review*, 75, 81-82. See also Arti K. Rai, 'Regulating Scientific Research: Intellectual Property Rights and the Norms of Science' (1999) 94 *Northwestern Law Review*, 77 ff.

10 Johanna von Braun and Meir P. Pugatch, 'The Changing face of the Pharmaceutical Industry and Intellectual Property Rights' (2005) *The Journal of World Intellectual Property*, 599 ff.

11 Highlighting this point, Giulia Schneider and Giovanni Comandè, 'Regulatory Challenges of Data Mining Practices: The Case of the Never-ending lifecycles of 'Health Data'' (2018) 25 *European Journal of Health Law*, 2018, 284 ff.

12 On the issue see Scott Hensley, 'Software Will Play Key Role in Future Genome Research', (14 February 2001) *Wall Street Journal* <<https://www.wsj.com/articles/SB982100274706275947>>.

free-riding threats of the public domain¹³. Relying on these tools, digital companies can control and limit access over health information- as it happens with the database right and the copyright- or secretize this same information- as it is the case of trade secrets. These different forms of protection over scientific digitised data frequently overlap and create a layered regime of protection over the results of research endeavours, variedly securing scientifically precious information¹⁴. In this perspective, both overlapping and adjacent rights over biomedical data leads to a situation of strict control by the initial rights' holders over upstream technology, *i.e.* scientific data and the technical processing infrastructure¹⁵.

- 16 In addition to legal measures, also factual and technical measure can further enclose companies' research data silos¹⁶. Technical measures of protection have both the effect of factually stretching the limitations on the scope of exclusivities set by the law¹⁷ and, even more interestingly, of factually controlling resources that would not be eligible of protection from both the perspective of objective requirements- as the originality requirement under copyright or the substantial investment requirement under database protection-, and subjective requirement, because the subjects who enact these measures is not the originator of the resource. This means that a specific resource can be appropriated by a player through technical protection measures even if the resource has been originally generated by another company¹⁸.

The above-traced scenario reflects the emergence of a data "thicket" problem, freezing competitors' capacities to compete at a phase that goes well before the marketization of the final product and relates to the previous stage of research over the product itself¹⁹.

- 17 Companies' data "silos" have been strongly criticised in the literature, observing how the excessive control over scientific information gives rise to a situation of "innovation bundling" for which "neither the invention nor the complements can be reasonably developed" without access to the protected information²⁰. This appears to hold true especially in the digital health sector²¹, where the aggregation of different datasets and the statistical insights that result from the combined datasets are becoming a precondition for a faster development and thus a faster marketization of new health-related products and services. For these purposes, the needed correlations and predictions are the more accurate and precise, the bigger the aggregated datasets are.
- 18 Hence, the research and innovation driven by the aggregation of different types of data risks to be obstructed by the existence of different rights over different types of datasets: pharmaceutical companies, for example, have control of traditional clinical trials data whereas digital companies cover with trade secrets scientifically valuable "runaway data".
- 19 The fragmentation of scientific knowledge together with the resulting erosion of publicly available research resources, thus risks to transform the relationship between intellectual property

13 James Boyle, *The Second Enclosure Movement and the Construction of the Public Domain* (2003) 66 *Law and Contemporary Problems* 33 ff., and more generally see Joseph E. Stiglitz, *Knowledge as a Public Good in: Inge Kaul and Isabelle Grunberg and Marc Stern, Global Public Goods: International Cooperation in the 21st Century* (Oxford Scholarship Online, 2003) 75 ff.

14 Rai, (n 7) 106-112.

15 *Ibid.*, 102.

16 Reto M. Hilty, 'Intellectual Property and Private Ordering' in: Rochelle Dreyfuss and Justine Pila, *The Oxford Handbook of Intellectual Property Law* (Oxford University Press, 2018) 898 ff.

17 *Ibid.*, 891.

18 Stressing this point Nadia Purtova, 'Health Data for Common Good: Defining the Boundaries and Social Dilemmas of Data Commons', in Ronald Leenes, Nadezhda Purtova and Samantha Adams, *Under Observation: The Interplay Between eHealth and Surveillance* (Springer, 2017), 177, 205.

19 William Nicholson Price II, *Expired Patents, Trade Secrets and Stymied Competition* (2017) 92, 4 *Notre Dame Law Review*, 1611, 1613.

20 This point is widely raised in the literature, Rai (n [9]) 813; Jerome H. Reichman and Paul F. Uhlir, 'A Contractually Reconstructed Research Commons for Scientific Data in a Highly Protectionist Intellectual Property Environment' (2003) *Law & Contemporary Problems*, 315, 402-408. See also Nicholson Price II (n [1]) 447-448, underlining how "keeping data secret" in the area of health research "may significantly hamper the development of black-box medicine. Secrecy slows cumulative innovation and promotes duplicative investment".

21 Similarly, Arti K. Rai, 'The Information Revolution Reaches Pharmaceuticals: Balancing Innovation Incentives, Cost, and Access in the Post-Genomic Era' (2001) *University of Illinois Law Review*, 173 ff.

protection and innovation in digital health research from a “direct” to an “inverse” proportionality relationship²².

- 20 The outcome of this changed scenario is the emerging need of firms to mediate between the possibility to successfully claim exclusivity rights over technological information and the preservation of innovation courses’ fruitfulness²³.

C. The Phenomenon of Data Pools in Digital Health Research

- 21 Concrete organisational responses to the rights’ and resources’ dispersion affecting scientific health information are to be found in collaboration schemes based on data sharing between different actors in the field of medical research. Information alliances achieved through the pooling of intellectual property rights and the establishment of coordination architectures over research patterns are capable -if well designed- to overcome scientific information silos hurdles in a pro-competitive manner²⁴ and thus advance innovation in digital health markets. Under these premises, aggregation of data in pools is to be seen as a direct reaction to the problem of data “thickets” and the precondition of technological innovation in the digital health sector²⁵.
- 22 Pooling practices as a means of concentrating high-technology resources and stirring innovation

in health-related markets, is a traditionally well-known phenomenon. Patent pooling schemes have been indeed largely used in the pharmaceutical sector²⁶.

- 23 They enable the licensing of complementary patents by means of a single agreement and at a standard royalty fee, with the related benefits in terms of cost cuts²⁷. At its very essence, patent pools are a form of technological cooperation between different right owners willing to speed up the process of cumulative innovation²⁸. Assembling together technology assets enables companies to put themselves together to remain at the forefront of information technology developments²⁹, through incentivising coordination mechanisms among participants and the prevention of opportunistic free-riding conducts³⁰.
- 24 Similarly to patent pools, also research cooperation initiatives based on the sharing of health data, imply the licensing of different datasets to a central administrator, who exploits the full potential of the aggregated data through data analytics technologies³¹. As with patent pools these kind of agreements reduce transaction costs related to data collection and processing operations³² and enable to aggregate a large quantity of data, generating more precise and accurate correlations and predictions.

22 This is confirmed by some economics studies, which have framed the relationship between intellectual property law and innovation as an “inverted-U relationship”. So Yuichi Furukawa, *Intellectual Property Protection and Innovation: an Inverted-U Relationship* (2010) *Economics Letters*, 99-101.

23 Colangelo (n 4) 4.

24 Stressing this point with regards to research on genetic data, Turna Ray, ‘Genomic Data Sharing Variant Gains Support. Collaboration Seen as a Key to Interpretation Challenge’ (2 May 2016) *Genome Web*, 2 <<https://www.genomeweb.com/informatics/genomic-variant-data-sharing-gains-support-collaboration-seen-keyinterpretation#.XMrTU5MzYb0>>. Rai (n [9]), 845.

25 Michael Mattioli, *The Data Pooling Problem* (2017) 32 *Berkeley Technology Law Journal* 179, 187, stating that in an information-based economy, incentivising the combination of different large datasets owned by different companies or institutions could serve similar innovation goals to the ones promoted by the patent system in a product-based economy.

26 For an overall assessment see Jorge A. Goldstein, ‘Critical Analysis of Patent Pools’ in: Geertrui Van Oweralle, *Gene Patents and Collaborative Licensing Models: Patent Pools, Clearinghouses, Open Source Models and Liability Regimes* (Cambridge University Press, 2009) 50. See also Robert P. Merges, ‘Institutions for Intellectual Property Transactions: the Case of Patent Pools’ in: Rochelle C. Dreyfuss-Diane Leenheer Zimmermann-Harry First (ed.), *Expanding the Boundaries of Intellectual Property: Innovation Policy for the Knowledge Society* (Oxford University Press, 2001) 123 ff.

27 For an empirical demonstration of the reduction of transaction costs given by a patent pool, Robert P. Merges and Michael Mattioli, ‘Measuring the Costs and Benefits of Patent Pools’ (2017) 78, 2 *Ohio State Law Journal*, 283 ff.

28 Giuseppe Colangelo, ‘Gli accordi di patent pooling’ (16 settembre 2008) *Società italiana di diritto ed economia* <<http://www.side-isle.it/ocs/viewabstract.php?id=141&cf=2>>.

29 *Ibid.*, 1.

30 Rai (n 9) 824.

31 Giuseppe Colangelo and Oscar Borgogno, ‘Data Sharing and Interoperability: Fostering Innovation and Competition through APIs’ (2019) 35, 5, *Computer Law & Security Review*, 105314, 105326.

32 *Ibid.*

- 25 The phenomenon of data pooling is being increasingly referred to by a strand of the literature with regards to the agreements made by firms for the sharing of “their digitalised information regarding a given market, in reference to a given service or generally in an industry, or within an e-ecosystem”³³. In this respect, data pools are complex collaborations that require collateral agreements on the processing technology needed for the pooling of the transferred data. The resulting agreements thus determine the processing infrastructure, which can be either delivered directly by one of the involved parties or outsourced by a third party³⁴.
- 26 With regards to the object of the transfer, the distinctive feature of data pooling practices is the difficulty to determine which data is exactly shared, this meaning the difficulty to determine whether only primary users’ data are being transferred or also the secondary data that are analytically drawn by the machine learning processes of the involved parties³⁵. In these regards, some strand of the literature³⁶ has interestingly observed that contracts regarding high technology projects “have become more and more fluid, because the projects are so complex that it is difficult to figure beforehand what is at stake”³⁷. This means, in turn that in the networked digital research environment, it is difficult to trace stable rules of data ownership and liability³⁸.
- 27 Under these premises, health data pools can be considered as a form of “contractually reconstructed research common”³⁹, which open up formed research data silos for the progression of scientific and technological progress⁴⁰. Hence, in the digital environment, the contractually-based aggregation of large health datasets owned by different research actors thus appears to serve innovation goals similar

33 Lindqvist (n[6]) 146.

34 Ibid.

35 Ibid, 149.

36 Karl Heinz Ladeur, ‘The Future of Law: Serial Law’ (2016) EUI Working Papers Law 2016/9 Department of Law <https://cadmus.eui.eu/bitstream/handle/1814/43345/LAW_2016_19.pdf?sequence=1&isAllowed=y>, 9.

37 Ibid.

38 Ibid, 6. This is very much observed by Effy Vayena and Alessandro Blasimme, ‘Health Research with Big Data: Time for Systemic Oversight’ (2018) 46 *The Journal of Law, Medicine & Ethics*, 119.

39 Reichman and Uhler (n 20) 416.

40 Mattioli (n 25) 187.

to the ones promoted by the patent system in a product-based economy. The contractual sharing of research valuable information is emerging as an increasingly important private ordering tool for the achievement of collaborative digital health innovation, in respect to which the intellectual property system alone appears to have a too little incentivising function⁴¹.

- 28 This raises in turn the issue whether at European policy and law, the sharing of health data between businesses for research and innovation purposes, is encouraged or rather restrained under different considerations as the ones related to the protection of health data subjects’ fundamental right, first of all to data protection. Against this backdrop, thus, the following paragraphs will assess whether and how health data sharing and the related innovation rationale is considered under European policy and the lawfulness of these data pooling practices under European data protection law.

D. Health Data Pools under European Policy: the Digital Single Market Strategy

- 29 Health data pools as described above involve i) massive processing of health data for the purposes of the delivery of digital health products and services and ii) the aggregation of different types of data among different stakeholders.
- 30 The first identified feature relates to the application of new processing infrastructures, such as algorithms and machine learning, for the purposes of the development of new tools and services based on information communication technologies (ICT). In this perspective, health data pools are to be inscribed in the broader economic phenomenon of digital health. In the words of the European Commission, “digital health and care refers to tools and services that use information and communication technologies (ICTs) to improve prevention, diagnosis, treatment, monitoring and management of health and lifestyle. Digital health and care has the potential to innovate and improve access to care, quality of care, and to increase the overall efficiency of the health sector”⁴².
- 31 From the second perspective, health data pools are to be placed in the other broader economic practice

41 Arguing in this sense Hilty (n 16) 898 ff.

42 For an overview European Commission, ‘eHealth: Digital Health and Care’ <https://ec.europa.eu/health/ehealth/overview_en>.

regarding information exchanges among different stakeholders. Information exchanges have been recently under increasing consideration by the European Commission, which has been stressing the importance of data sharing practices for the efficient development of the digital single market. In this context, the Commission has been employing the term “data sharing” in order to refer to “all possible forms and models” implying “data access or transfer” among different players, of both private and public nature⁴³. As the Commission further acknowledges, data sharing can be carried out through different technical mechanisms and under a variety of legal forms, supporting them⁴⁴. Under these premises, the practice of health data pools is to be contextualised in the two European policies regarding digital health and the free-flow of data. Far from being separate, these policies are intertwined fragments of the much wider European Digital Single Market Strategy.

I. Health Data Pools and Digital Health within the Digital Single Market Strategy

32 Digital health and the processing of health information have been increasingly considered at policy level by the European Commission for their innovation potential in the context of the digital internal market. This has ultimately led the Commission to comprehensively include digital health within the Digital Single Market Strategy for Europe⁴⁵. Hence, the digital transformation of European health and care can be considered in the general perspective of European digital markets.

33 Interestingly, the 2015 Digital Single Market Strategy for Europe⁴⁶ did not focus specifically on health and care, but already made some references to e-health. References to e-health were made as an example of another sector, amongst the others mentioned⁴⁷, where digital services would bring benefits to both users/consumers and businesses, particularly in terms of standardization and interoperability⁴⁸.

34 In May 2017, in the Communication on the Mid-Term Review on the implementation of the Digital Single Market Strategy, the European Commission came to strengthen the focus on digital health, particularly stressing the two policy objectives i) of providing citizens’ secure access to electronic health records and ii) of supporting data infrastructure to advance research, disease prevention and personalized health⁴⁹.

35 Ultimately, in its Communication on “enabling the digital transformation of health and care in the Digital Single Market: empowering citizens and building a healthier society”⁵⁰, the Commission has stressed the importance of the development of “strong approaches in high performance computing, data analytics and artificial intelligence, which can help design and test new healthcare products, provide faster diagnoses and better treatments”⁵¹.

43 So European Commission, ‘Commission Staff Working Document, Guidance on Sharing Private Sector Data in the European Data Economy, Accompanying the Document Communication from the Commission to the European Parliament, the Council, the European economic and social Committee and the Committee of the Regions “Towards a Common European Data Space’ (15 April 2018) SWD(2018) 125 final <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018SC0125&from=EN>>, 5.

44 Ibid, 12.

45 See lately, European Commission, ‘Commission Communication on the Mid-Term Review on the implementation of the Digital Single Market Strategy. A Connected Digital Single Market for All’, (10 May 2017) COM(2017) 228 final; <<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1496330315823&uri=CELEX:52017DC0228>>.

46 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 Digital Single Strategy for Europe, 2015 Digital Single Market Strategy for Europe’ (6 May 2015) COM(2015) 192 final <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2015%3A192%3AFIN>>.

47 E-Health has indeed been considered by the Commission together with other digital services in the context of e-government, e-energy-e-transport, *ibid*, 15.

48 European Commission, ‘Staff Working Document, Accompanying the Document- Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on Enabling the Digital Transformation of Health and Care in the Digital Single Market; Empowering Citizens and Building a Healthier Society’ (25 April 2018) <<https://ec.europa.eu/digital-single-market/en/news/communication-enabling-digital-transformation-health-and-care-digital-single-market-empowering>>, 3-4.

49 European Commission, (n 45) 19.

50 European Commission (n 48) 3.

51 *Ibid*.

- 36 According to the Commission, European health systems would benefit from digitization processes, in terms of resilience and sustainability⁵². Digital health tools are indeed deemed to improve patients' safety, reduce the number of avoidable mistakes, and improve the coordination and continuity of care and better adherence to treatment⁵³. These gains are evaluated within the frame of the resulting cost-savings and economic efficiencies⁵⁴.
- 37 The European Commission thus majorly links technological developments in health to the central goal of economic optimization and innovation⁵⁵. More precisely, the wider deployment of digital products and services in healthcare is deemed to stimulate growth and promote the European industry in the domain, with that overall maximizing the potential of the digital internal market⁵⁶.
- 38 Against the backdrop of the technological transformations relevant for the healthcare sector, the European Commission highlights the need for health and care authorities to face the emerging common challenges jointly. These challenges primarily concern the development of EU-wide standards for data quality, reliability and cybersecurity, the EU-wide standardization of electronic health records and a better interoperability through open exchange formats⁵⁷.

II. Health Data Pools and The Free Flow of Information Within the Digital Single Market Strategy

- 39 Health data pools are data sharing practices between different stakeholders, of both public and private nature, acting in the European internal market. From this perspective, health data pools are to be contextualised also in the other branch of European policy concerning the free-flow of information as lately concretised in the more specific policy promoting the accessibility and re-use of data.
- 40 Together with the rise of the digital economy, driven by “digital data, computation and automation”⁵⁸, the Commission has soon identified “the insufficient access to large datasets and the enabling infrastructure” as direct obstacles to market entry and to innovation⁵⁹. This is why the Digital Single Market Strategy has acknowledged information exchanges as a precondition for “maximising the growth potential of the digital economy” and assuring an efficient use of data across the EU⁶⁰.
- 41 Accordingly, the free-flow of information initiative⁶¹ has become a key action within the project of the implementation of a Digital Single Market Strategy⁶². In particular, the importance of access to health data has been lately highlighted by the European

52 Ibid.

53 Ibid, 11.

54 Ibid, 1; 11 and 12. The market efficiency gains of digitisation of healthcare have been stressed by the Council of Europe on several occasions. See Council of the European Union, ‘Council conclusions: Towards modern, responsive and sustainable health systems’ (6 June 2011) OJ C 202, 8 July 2011, 10; Id., ‘Council conclusions on the “Reflection process on modern, responsive and sustainable health systems’ (10 December 2013) OJ C 376 21 December 2014, 3; Id., ‘Council Conclusions on the Economic Crisis and Healthcare’ (20 June 2014) OJ C 217 10 July 2014, 2; Id., ‘Council Conclusions on Personalised Medicine for Patients’, 7 December 2015, OJ C 421 17 December 2015, 2. Id., ‘Council Conclusions on Health in the Digital Society- Making Progress in Data-driven Innovation in the Field of Health’ (2017) OJ C 440/3 21 December 2017, 5.

55 Mark L. Flear, ‘Regulating New Technologies: EU Internal Market Law, Risk and Socio-Technical Order’ in: Marise Cremona, *New Technologies and EU Law* (Oxford University Press, 2017) 74 ff., 76.

56 European Commission (n 48) 5.

57 Ibid, 5.

58 European Commission, ‘Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions- Towards a Thriving Data Economy’ (2 July 2014) COM(2014) 442 final <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014DC0442&from=EN>> 2.

59 Ibid, 2-3.

60 European Commission (n 46), 14-15.

61 The free flow of information initiative was first announced in the “Mid-Term Review on the implementation of the Digital Single Market Strategy”. See also European Commission, ‘Commission Staff Working Document on the Free Flow of Data and Emerging Issues of the European Data Economy’ (10 January 2017) SWD(2017) 2 final <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52017SC0002>>, 30-31.

62 European Commission, ‘Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions-Building a European Data Economy’ (10 January 2017) COM(2017) 9 final <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2017:9:FIN>>.

Commission in the “European strategy for data”⁶³. Here, the establishment of a “common European health data space” has been considered among the nine European data spaces the European Commission intends to encourage through the newly established strategy⁶⁴. For the purposes of strengthening the relevant regulatory framework, the Commission has announced a new package of measures, meant to create a European common data space, in which new products and services are developed upon the shared data⁶⁵.

- 42 In this respect, the Commission has come to stress the relevance of privately held data for the purposes of business to business (B2B) sharing agreements⁶⁶. It is highlighted that access and use of a same set of shared data can be employed by businesses for the development and the testing of different products⁶⁷.
- 43 In addition to this, also data transfers occurring within public-private partnerships have been considered by the Commission for their economic potential⁶⁸. In this perspective, it is interesting to highlight that the reform of the Public Sector Information Directive places a particular emphasis on research data⁶⁹. In this respect, the new Open Data Directive⁷⁰ expressly considers research data under art. 10 stating that “member states shall support the availability of research data (...)” on the basis of “open access policies”. Access to and reuse of publicly funded research data is further encouraged by the renewed Recommendation on access to

and preservation of scientific information⁷¹. The Recommendation considers the new text and data mining technologies⁷² and the technical standards for data⁷³ as important catalysts for the access and reuse of extracted scientific information generated by public stakeholders. Accordingly, the new Recommendation on access to and preservation of scientific information adapts these goals to the new datification courses and the enhanced data analytics capabilities⁷⁴. Big data are indeed deemed to change the way research is performed and knowledge is shared⁷⁵, along the lines of a paradigm shift towards more collaborative methods of carrying out scientific research⁷⁶. This is in turn leading to a more open and transparent research approach, which in the view of the Commission needs to be further encouraged and incentivised⁷⁷.

- 44 Both the new Open Data Directive and the mentioned Recommendation appear to directly build upon the “principle of free movement of data within the EU”⁷⁸, in this way complementing the Regulation regarding the free-flow of non-personal data⁷⁹.
- 45 Against the backdrop of these first legislative measures regarding the free flow of data within the Digital Single Market, the question has arisen in the literature whether the European policy regarding

63 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 European Strategy for Data’ (19 February 2020) COM(2020) 66 final <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0066&from=EN>>, 7.

64 Ibid, 22.

65 European Commission (n 43) 1.

66 Ibid, 5.

67 Ibid, 2.

68 European Commission, ‘Big Data Value Private-Public Partnership’ <<https://ec.europa.eu/digital-single-market/en/big-data-value-public-private-partnership>>.

69 European Commission (n 43) 6-7.

70 Directive EU 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information (26 June 2019), OJ L 172/56 <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L1024&from=EN>>.

71 European Commission, ‘Commission Recommendation EU 2018/790 of 25 April 2018 on Access to and Preservation of Scientific Information’ <https://www.eoscportal.eu/sites/default/files/CELEX_32018H0790_EN_TXT.pdf>.

72 Ibid, para. 3, titled “Management of Research Data, including Open Access”.

73 Ibid, para 6 and 7, titled “Infrastructures for Open Data”.

74 Ibid, recital 12.

75 Ibid, recital 2.

76 Ibid, recital 9, stressing that “technological progress has over time caused a major shift in the world of science towards increasingly collaborative methods, and has steadily contributed to an increasing volume of scientific material”.

77 Ibid, recital 10 and para 9, titled “Incentives and Rewards”.

78 European Commission (n 43) 10.

79 European Parliament and Council of the European Union, ‘Regulation (EU) 2018/1807 of the European Parliament and of the Council of 14 November 2018 on a framework for the free flow of non-personal data in the European Union’ 28 November 2018, OJ L 303/59, online available at <<https://eurlex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:32018R1807&from=EN>>.

the free flow of information should concern only non-personal data or include also personal data. Indeed, it was initially declared that the free-flow of information would have referred only to non-personal data⁸⁰. Personal data were said to fall outside the scope of the free-flow of data initiative since this data is already regulated in the different regulatory sector covered by the General Data Protection Regulation and the e-Privacy Directive, specifically setting the framework with respect to processing of personal data⁸¹.

- 46 However, personal data have been somehow taken into consideration by the Commission, acknowledging that actors in the data economy “deal both with personal and non-personal data and that data flows and datasets will regularly contain both types”⁸². It is also further affirmed that “any policy measure must take account of this economic reality and of the legal framework on the protection of personal data, while respecting the fundamental rights of individuals”⁸³. These words by the Commission reflect that the object of the policy regarding the free-flow of information is still largely unclear⁸⁴. This is highlighted by a strand of the literature, calling for a more comprehensive policy and regulatory approach⁸⁵. Along these lines, the European Commission has lately come to pair the General Data Protection Regulation with the Regulation on the free flow of non-personal data, considering the two bodies of law as a comprehensive and coherent framework to the free movement of data in the European Union⁸⁶.

80 European Commission (n 43) 1.

81 Ibid.

82 European Commission (n 62) 9.

83 Ibid.

84 Noticing a certain ambivalence by the Commission with regards the relationship between the free-flow of data policy and data protection law, Inge Graef, Raphaël Gellert and Martin Husovec, ‘Towards a Holistic Regulatory Approach for the European Data Economy: Why the Illusive Notion of Non-Personal Data is Counterproductive to Data Innovation’ (2019) 44, 5 *European Law Review* 605, 607.

85 Ibid., 610; Josef Drexler, ‘Legal Challenges of the Changing Role of Personal and Non-personal Data in the Data Economy’ in: Alberto De Franceschi and Reiner Schulze (ed.), *Digital Revolution- New Challenges for Law- Data Protection, Artificial Intelligence, Smart Products, Blockchain Technology and Virtual Currencies* (C.H. Beck, 2019) 19, 23 ff.

86 European Commission, ‘Free Flow of Non Personal Data’ <<https://ec.europa.eu/digital-single-market/en/free-flow-non-personal-data>>. See in these regards, Drexler (n 85) 20,

E. Health Data Pools as Health Data Processing under European Data Protection Law

- 47 Health data pools for research and innovation purposes in the field of digital health involve the sharing and thus processing of data subjects’ actual or potential sensitive information. The innovation objectives underlying health data pools and supported by European Union’s policy in the context of Digital Single Market Strategy thus need to be weighed against other regulatory objectives of European law and especially of European data protection law.
- 48 The General Data Protection Regulation sets a specific regulatory framework for the processing of health data. Indeed, it provides specific definitions of different types of health data, such as genetic data or biometric data under art. 4(13, 14) and 15 GDPR. In addition, it categorizes health data as a “special category of data” the processing of which is prohibited under art. 9(1) GDPR. Ultimately, it sets some broad exemptions to such prohibition. These exemptions allow the processing of health data if it is carried out for certain purposes and provided specific conditions are met.
- 49 By establishing a general prohibition of health data processing and some grounds of exceptions to that prohibition, the regulatory status of health data processing under the GDPR appears to be defined by a layered regime and triggers some challenging interpretative efforts.
- 50 Before digging deeper into the multifaceted data protection law provisions regarding the processing of health data, some theoretical background considerations are needed. Indeed, the layered regime established with regards to health data is the result of a much deeper tension within European data protection law, which the General Data Protection Regulation has inherited from the previous Directive and partly exacerbated. This tension relates to the two seemingly contrasting objectives of data protection law, on the one hand the protection of data subjects’ fundamental rights in the digital environment and on the other hand the promotion of lawful data flows fueling efficiency outcomes within the digital single market.

observing that “personal data are no longer only objects of a privacy interest but are increasingly recognised in their role as a valuable asset used by businesses in the digital sector”.

I. European Data Protection Law between Fundamental Rights Protection and Market Regulation

- 51 Born from the rib of the right to privacy⁸⁷, the European right to data protection has become an autonomous fundamental right in the European Charter of Fundamental Rights under art. 8 EU Charter⁸⁸. This is directly reflected in the General Data Protection Regulation⁸⁹, which is legally rooted in art. 16 TFUE and recalls art. 8 EU Charter in recital 1.
- 52 The fundamental rights dimension of the European right to data protection has however broadened in the digital economy, where data processing activities pose substantial threats first of all to individuals' rights to autonomy and informational self-determination⁹⁰, and also to other fundamental

rights, such as the right to informational self-determination, the right to equality and non-discrimination⁹¹.

- 53 As a direct response to the ongoing technological and economic changes, the General Data Protection Regulation follows a risk-based approach, which considers the treatment of personal data conducted on a massive scale⁹² as a risky practice⁹³. From this perspective, the protection of the right to data protection in the form of the right to a fair, transparent and accountable data collection and processing⁹⁴ becomes a structural precondition to the protection of these other fundamental rights, as jeopardised by businesses' algorithmic models⁹⁵.
- 54 However, the General Data Protection Regulation's objective of protecting data subjects' fundamental rights from the intrusiveness of new data processing technologies⁹⁶ coexists with a further regulatory

87 For a comment on the relationship between privacy and data protection, Raphaël Gellert and Serge Gutwirth, 'The Legal Construction of Privacy and Data Protection' (2013) 29 Computer Law & Security Review, 522 ff.; Orla Lynskey, 'Deconstructing Data Protection: the 'Added-value' of a Right to Data Protection in the EU Legal Order' (2014) 63 International and Comparative Law Quarterly, 569 ff.

88 For a critical assessment of the fundamental rights nature of the right to data protection, see Bart Van Der Sloot, 'Legal Fundamentalism: is Data Protection Really a Fundamental Right?' in: Ronald Leenes, Rosamunda van Brakel, Serge Gutwirth and Paul De Hert, Data Protection and Privacy: (In) visibilities and Infrastructure (Springer, 2017), 3 ff.

89 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), from now on GDPR.

90 Alessandro Spina, 'Risk Regulation of Big Data: Has the Time Arrived for a Paradigm Shift in Eu Data Protection Law?', Case notes to Case C-293/12 and C-594/12 *Digital Rights Ireland and Seitlinger and Others*' (2014) 5, 2 European Journal of Risk Regulation, 248 ff., 251, commenting on the statements of the European Court of Justice, affirming that the various collected "(...) data, taken as a whole may allow very precise conclusions to be drawn concerning the private lives of the persons whose data has been retained". So Court of Justice of the European Union, *Digital Rights Ireland Ltd vs. Seitlinger and Others* (8 April 2014) Joined Cases C293/12 and C594/12, <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:62012CJ0293&from=EN>>, para 27.

91 See Recital 75 GDPR: "the risk to the rights and freedoms of natural persons, of varying likelihood and severity, may result from personal data processing which could lead to physical, material or non-material damage (...)". Emphasis added. Sandra Wachter, 'Primus inter Pares: Privacy as a Precondition for Self-development, Personal Fulfilment and the Free Enjoyment of Fundamental Rights' (22 January 2017) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2903514&download=yes>.

92 See Recital 6 GDPR observing how "rapid technological developments and globalisation have brought new challenges for the protection of personal data. The scale of the collection and sharing of personal data has increased significantly. Technology allows both private companies and public authorities to make use of personal data on an unprecedented scale in order to pursue their activities".

93 See Recitals 75-76 GDPR. For the literature see Ira S. Rubinstein, *Big Data: The End of Privacy or a New Beginning?* (2013) 3, 2 International Data Privacy Law, 74 ff., highlighting the systemic risks related to massive data processing and Raphaël Gellert, 'Understanding Data Protection as Risk Regulation' (2015) Journal of Internet Law, 3, 6 ff.

94 See art. 5 GDPR.

95 Viktor Mayer-Schonberger-Kenneth Cukier, *Big Data: A Revolution that Will Transform How We Live, Work and Think* (Houghton Mifflin, 2013), 20, noticing that data protection was generated as a risk regulation, aimed at controlling the different steps of data processing operations, made up by "complex and rich procedures to control and regulate the use of technology".

96 For a critical of the GDPR in respect to algorithmic inferences, Sandra Wachter and Brent Mittelstadt, 'A Right to Reasonable Inferences: Re-Thinking Data Protection Law

pillar of European data protection law, related to the promotion of the free flow of personal information for the integration and consolidation of the internal market. This pillar had a primary importance within the Data Protection Directive⁹⁷, whose legal foundations were to be found exactly in the regulation of the internal market under art. 100a of the Treaty establishing the European Community⁹⁸. It has however not lost its hold within the normative system of the General Data Protection Regulation. As has been observed by prominent scholarship, under the new Regulation the fundamental rights and the market integration purposes appear to be placed “on equal footing”⁹⁹.

- 55 Here, the market integration objective comes right behind the primary objective of data subjects’ fundamental rights in the digital economy, and is expressed in recital 2 GDPR, stating how the Regulation is intended to contribute amongst others, “to the economic and social progress” and “to the strengthening and the convergence of the economies within the internal market”. Accordingly, recital 5 GDPR acknowledges how the flows of personal data have increased as a consequence of the “economic and social integration resulting from the functioning of the internal market” and with that also the “exchange of personal data between public and private actors”. This is confirmed also by recital 13 GDPR, where the free movement of personal data is considered as a requirement for the proper functioning of the internal market and ultimately by recital 123 GDPR, where supervisory authorities are given the task of monitoring and contributing to the application of data protection rules “in order to

protect natural persons in relation to the processing of their personal data and to facilitate the free flow of personal data within the internal market”¹⁰⁰.

- 56 These statements reflect the acknowledgment by the European legislator of the economic value of personal data within the dynamics of the digital economy. They reflect the view that personal data -and the sharing of it- are not only an object of protection but also an “innovation enabling technology”¹⁰¹ and with that a strategic asset for the establishment of an efficient Digital Single Market¹⁰².
- 57 Against the backdrop of the cited recitals, it appears that under the Regulation more than it occurred in the Directive, European data protection law is characterised by an internal tension between two apparently conflicting aims, on the one hand the restriction of personal data processing for the sake of the protection of the data subjects’ rights and on the other hand the maximisation of personal data flows for the development of the digital economy¹⁰³.

II. The Legal bases for the Processing of Health Data

- 58 The two above-highlighted objectives of European data protection law are well reflected in the regulation of health data established by the General Data Protection Regulation.
- 59 Indeed, in line with the previous Data Protection Directive¹⁰⁴, the General Data Protection Regulation

in the Age of Big Data and AI’ (2019) 2 Columbia Business Law Review, 494 ff.

- 97 See in these regards also the European Court of Justice, ‘Österreichischer Rundfunk and Others’ (20 May 2003) Joined Cases C-465/00, C-138/01 and C-139/01 <<http://curia.europa.eu/juris/showPdf.jsf?text=&docid=48330&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=8237402>>, para 39, and Id., ‘Commission v. Germany’ (9 March 2010) Case C-518/07 <<http://curia.europa.eu/juris/document/document.jsf?text=&docid=79752&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&id=8240530>>, para 3.
- 98 See art. 100 Treaty Establishing the European Community (N C 224/6 OJ 31 August 1992) <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:11992E/TXT&from=EN>>. For the literature see Van Der Sloot (n[88]), 25.
- 99 Orla Lynskey, *The Foundations of EU Data Protection Law* (Oxford University Press, 2015) 47.

100 So Recital 123 GDPR.

101 Urs Gasser, ‘Cloud Innovation and the Law: Issues, Approaches and Interplay’ (18 March 2014) Berkman Center Research Publication, 2014-7 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2410271>, 6 ff.

102 Luca Marelli and Giuseppe Testa, ‘Scrutinizing the EU General Data Protection Regulation- How Will New Decentralized Governance Impact Research?’ (4 May 2018) 360, 6388 Science, 496, 497-498.

103 For a reconstruction of the “hybrid nature of EU data protection law”, Lynskey (n 99) 8-9.

104 See art. 8 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, OJ L 281, 23 November 1995. European Data Protection Supervisor, ‘Opinion on the Communication from the Commission on ‘eHealth Action Plan 2012-2020- Innovative Healthcare for the 21st Century’ (27 March 2013) <https://edps.europa.eu/sites/edp/files/publication/13-03-27_ehealth_

subjects the processing of health data to stricter data protection rules. The prohibition of processing special categories of data, under art. 9(1) GDPR constitutes a direct (over-)regulatory response to the objective of protecting data subjects' fundamental rights against non-consented accesses to very intimate subjective spheres such as the one of health¹⁰⁵.

- 60 However, there are some exceptions to this prohibition, which allow the processing of health data on the basis of different legal grounds listed under art. 9(2) GDPR¹⁰⁶.
- 61 These legal grounds can be respectively sub-grouped as follows: i) data subject's consent under art. 9(2) lett. a) GDPR and, strictly related to it, the need to protect a vital interests of the data subject under art. 9(2) lett. c) GDPR as well as the manifest publicity of the personal data under art. 9(2) lett. e) GDPR; ii) the processing is necessary for reasons of substantial public interest under art. 9(2) lett. g) GDPR, for the purposes of preventive or occupational medicine, medical diagnosis, the provision of health or social care or treatment or the management of health or social care and systems and services under art. 9(2) lett. h) and for reasons of public interest in the area of public health under art. 9(2) lett. i) GDPR; iii) the processing is necessary for scientific or historical research purposes or statistical purposes under art. 9(2) lett. j) GDPR.
- 62 The first category of legal bases for the processing of health data is based on the data subjects' subjective perspective, concretised through his/her determinations in the form of consent or in respect to his/her fundamental interests. Conversely, the other two identified categories take a rather objective perspective and rely on objective features of data controllers' processing activities, related to their public interest or research-oriented nature¹⁰⁷.

action_en.pdf>, 3 and Article 29 Data Protection Working Party, 'Working Document on the Processing of Personal Data Relating to Health in Electronic Health Records' (15 February 2007) <<https://www.dataprotection.ro/servlet/ViewDocument?id=228>>, 8.

- 105 Stressing the symbolic value of this provision Tal Z. Zarsky, 'Incompatible: The GDPR in the Age of Big Data' (2017) 47 *Seton Hall Law Review* 995, 1014.
- 106 Nicolo Zingales, 'Data Protection Considerations in EU Competition Law: Funnel or Straightjacket for Innovation?', in: Paul Nihoul and Pieter Van Cleynenbreugel (ed.), *The Roles of Innovation in Competition Law Analysis* (Edward Elgar, 2018) 79 ff., 108, considering data protection law as a "permission based" regime.
- 107 In this direction see, Marelli and Testa (n 102) 496, observing a "shift toward a decentralized, controller-anchored, and

- 63 As a general premise it needs to be recalled that the mentioned legal bases established under art. 9(2) GDPR for the processing of special categories of data need to be linked to the legal grounds generally established under art 6 GDPR setting the conditions for the lawfulness of the processing. According to the majority of the scholarship indeed, the legal grounds under art. 9(2) GDPR are complementary to the general requirements for a lawful data processing under art. 6 GDPR. This means that the existence of a general lawful basis under art. 6 GDPR is a precondition for the processing of special categories of data under the special conditions laid down under art. 9(2) para GDPR¹⁰⁸.
- 64 As will be better shown in the next paragraph, the legitimate basis for processing under art. 9(2) lett. j) GDPR appears to be particularly interesting for the case of health data pools. It indeed appears to provide some fertile normative grounds for the flourishing of health data pools aimed at developing and placing new digital health products and services on the market. By doing so, it attests the European legislator's acknowledgement of the scientific- and thus of the innovation- enabling value of health data as special categories of data within the European digital market.
- 65 This legal basis for the processing of health data needs to be carefully interpreted in respect to the general prohibition regarding the same processing of special categories of personal data. As will be shown, it is also connected to an outright "research exemption", derogating to important general data protection principles and rules. If correctly implemented, this exemption does not totally back out fundamental rights protection goals. However, as will be argued, due to the interpretative uncertainties that it raises, it opens some loopholes that risk doing so.

III. Research as a Legal Basis for the Processing of Health Data

- 66 Among the above-mentioned legal bases for the processing of health data, the most interesting one for the case of health data pools is given by art. 9(2) lett. j) GDPR. This provision allows health
-
- accountability-based model".
- 108 This is the solution given by Edward S. Dove, 'The EU General Data Protection Regulation: Implications for International Scientific Research in the Digital Era' (2018) *The Journal of Law, Medicine & Ethics*, 1013, 1024. See also Sebastian Schulz, 'Art. 9 Verarbeitung besonderer Kategorien personenbezogener Daten' in: Peter Gola, *Datenschutz-Grundverordnung VO (EU) 2016/679- Kommentar* (C.H. Beck, 2018), ed.) 361 ff., 365.

data processing when it is “necessary for reasons of public interest, scientific or historical research purposes or statistical purposes”. In this perspective, thus, art. 9(2) lett. j GDPR establishes an autonomous legitimate basis for the processing of health data, which is directly grounded in research objectives.

- 67 The promises of health data processing for scientific research projects is acknowledged under recital 157 GDPR, where it is stated that “by coupling information from registries researchers can obtain new knowledge of great value with regard to widespread medical conditions such as cardiovascular disease, cancer and depression. (...) In order to facilitate scientific research personal data can be processed for scientific research purposes, subject to appropriate conditions and safeguards set out in Union or Member State law”.
- 68 In accordance with these statements, processing for research purposes appears to have a privileged position within the General Data Protection Regulation, which provides various definitions of data-driven research. The Recitals do in fact treat different types of research separately, distinguishing between “scientific research”, “historical research”, “statistical research”.
- 69 With regards to scientific research, recital 159 GDPR defines it as “the technological development and demonstration, fundamental research, applied research, and *privately funded research*”¹⁰⁹, as well as public health research. The recital expressly refers to Article 179(1) of the Treaty on the Functioning of the European Union, which encourages “the objective of strengthening its scientific and technological bases by achieving a European research area in which researchers, scientific knowledge and technology circulate freely”. As clarified by recital 160 GDPR, historical research comprises genealogical research. Ultimately, “statistical research” is defined under recital 162 GDPR, as “any operation of collection and the processing of personal data necessary for statistical surveys or for the production of statistical results”. As the same recital affirms, statistical research “implies that the result of processing for statistical purposes is not personal data, but aggregate data”. While statistical research may be used in support of scientific research, it cannot be “used in support of measures or decisions regarding any particular natural person”¹¹⁰.

109 Emphasis added.

110 The Recital specifies that the EU or the Member States should legislate around the scope of the statistical research exemptions, including defining the appropriate safeguards for assuring “statistical confidentiality”. So recital 162 GDPR.

- 70 A strand of the literature commenting art. 9(2) lett. j) GDPR, has observed that the notion of processing for statistical purposes could encompass also processing activities carried out through big data analytics as they rely exactly on statistical methods¹¹¹. As can be derived from the mentioned recitals, the General Data Protection Regulation, adopts a broad definition of research¹¹², likely to encompass the activities of both public and private entities¹¹³. These considerations lead to the question of the nature of the link between the legal grounds of processing for research purposes and for public interest.
- 71 Indeed, although it is true that art. 9 (2) lett. j) GDPR refers both to processing activities carried out in the public interest and for research purposes, the notions are considered in a separate manner by the Regulation¹¹⁴. By considering the research purpose autonomously, indeed, the Regulation appears to overcome the approach adopted by the previous Directive, which mentioned the scientific research as an example of “reasons of substantial public interest” under recital 34¹¹⁵. It thus seems that, differently from what was the case under the Directive, under the Regulation scientific research is not a specification of the public interest.
- 72 In view of the risk of reliance on the legal grounds of scientific research also for commercially-oriented activities¹¹⁶, the Biobanking and

111 Wachter and Mittelstadt (n 96) 592-; similarly Zarsky (n 105) 1013.

112 This is directly affirmed by recital 159 GDPR, which affirms that “for the purposes of this Regulation, the processing of personal data for scientific research purposes should be interpreted in a broad manner”.

113 Similarly, Kärt Pormeister, ‘Genetic Data and the Research Exemption: is the GDPR Going too Far?’ (2017) 7, 2 International Data Privacy Law, 137 ff.

114 Paul Quinn and Liam Quinn, ‘Big Genetic Data and Its Big Data Protection Challenges’ (2018) Computer Law & Security Review, 1015.

115 Mahsa Shabani and Pascal Borry, ‘Rules for Processing Genetic Data for Research Purposes in View of the New General Data Protection Regulation’ (2018) 26, 2 European Journal of Human Genetics, 149, 153. It must be additionally recalled that under the Previous Directive, the legal base of the processing in the public interest, has been used by Member States to permit processing for a range of purposes, as scientific research. This has occurred for example in Germany. See Quinn and Quinn (n 114) 1013.

116 Chih-hsing Ho, ‘Challenges of the EU General Data Protection Regulation for Biobanking and Scientific Research’ (2017) 25, 1 Journal of Law, Information and Science, 84, 98-99,

BioMolecular Resources Research Infrastructure-European Research Infrastructure Consortium (BBMRI-ERIC) has stressed the need to restrict the broad interpretation given to the General Data Protection Regulation's notion of scientific research so as to consider only public interest-oriented research activities¹¹⁷. A first restriction for these purposes is directly provided under art. 9(2) lett. j GDPR, requiring processing activities carried out for research purposes to be based on Union or Member State law. This means that the well before interpretative debates, the definition of which processing activities shall fall under art. 9(2) lett. j) GDPR is left to specific legislations under Union or Member State law. With regards to European Union law, an example of such specific regulation is given by the Clinical Trial Regulation¹¹⁸, which the European Data Protection Board has lately clarified as a "sectoral law containing specific provisions relevant from a data protection viewpoint but no derogations to the GDPR", thus clarifying that the two frameworks both apply simultaneously¹¹⁹.

where the Author cites some empirical studies showing the mistrust of consumers with regards the use of health data by private commercial entities. See Royal Statistical Society, 'Royal Statistical Society Research on Trust in Data and Attitudes Toward Data Use/Data Sharing-Briefing Note' (22 July 2014) <<http://www.statslife.org.uk/images/pdf/rss-data-trust-data-sharingattitudes-research-note.pdf>>.

- 117 BBMRI-ERIC- Biobanking and Biomolecular Resources Research Infrastructure, 'Position Paper on the General Data Protection Regulation' (October 2015) <http://www.bbMRI-eric.eu/wp-content/uploads/BBMRI-ERIC-Position-Paper-General-Data-Protection-Regulation-October-2015_rev1_title.pdf>, 3. This is the view shared also by a strand of the literature, Bertram Raum, 'DS-GVO Art. 89 Verarbeitung zu Archivzwecken, Forschungszwecken' in: Eugen Ehmann and Martin Selmayr (ed.), *Datenschutz-Grundverordnung* (C.H. Beck, 2017), 41-42 and William Nicholson Price II, Margot E. Kaminski, Timo Minssen and Kayte Spector-Bagdady, 'Shadow Health Records Meet New Privacy Laws- How Will Research Respond to a Changing Regulatory Space?' (2019) 363, 6426 Science, 448, 450.
- 118 Regulation EU n. 536/2014 of the European Parliament and of the Council of 16 April 2014 on clinical trials on medicinal products for human use, and repealing Directive 2001/20/EC, OJ L 158/1, 27 May 2014 <https://ec.europa.eu/health/sites/health/files/files/eudralex/vol-1/reg_2014_536/reg_2014_536_en.pdf>.
- 119 European Data Protection Board, 'Opinion 3/2019 Concerning the Questions and the Answers on the Interplay Between the Clinical Trials Regulation (CTR) and the General Data Protection Regulation (GDPR)(Art. 70.1.b)' (32 January 2019) <<https://www.dataprotection.ro/servlet/ViewDocument?id=1629>>, 3.

73 Under these premises, it appears that the General Data Protection Regulation leaves much room open for interpretation regarding the link between the processing for research- be it scientific or statistical- purposes and secondary commercially-oriented purposes. In this respect, however, the same art. 9(2) lett. j) GDPR sets some first normative limits for the processing of health data for research purposes, requiring such processing to be proportionate to the aim pursued- consistently with the proportionality and data minimization principles under art. 5(1) lett. b) GDPR-, to respect the essence of the data protection right and be subject to specific safeguards for the protection of the data subjects' fundamental rights and interests¹²⁰. Hence, in addition to further legislative definitions, more specific and decisive interpretative guidelines from the European Data Protection Board regarding such limits would be desirable¹²¹.

IV. The Special Data Protection Regime for the Processing of Health Data under the Research Exemption

- 74 A correct interpretation of the scope of art. 9(2) lett. j) GDPR is of crucial importance in order to determine the severity of the data protection regime applicable to the case of health data pools. In the General Data Protection Regulation's system, the processing of personal data for research purposes is indeed related to a special data protection regime, which entails significant derogations to ordinary data subjects' rights and controllers' obligations and at the same time requires the enactment of adequate safeguards for the protection of data subjects' rights in the context of data-driven research projects.
- 75 Such special data protection regime is given by the interplay between the considered art. 9(2) lett. j) GDPR and arts. 5(1) lett. b); 6(4); and 89 GDPR. The interaction between the cited provisions subjects also data concerning health, which are processed under the legitimate basis set out under art. 9(2) lett. j) GDPR, to the "research exemption" established under arts. 5(1) lett. b); 6(4); and 89 GDPR. These last provisions state that further processing of personal data for research purposes is *per se* compatible with the initial purpose of data collection, provided

120 Giovanni Comandè, 'Ricerca in sanità e data protection... un puzzle risolvibile' (2019) 1 Rivista italiana di medicina legale, 187, 195.

121 The need for a clarification regarding the scope of the GDPR's research exemption is stressed by Price, Kaminski, Minssen and Spector-Bagdady (n 117) 450.

the safeguards required under art. 89(1) GDPR are enacted. Accordingly, under the research exemption, the processing of health data for research purposes can derogate fundamental data protection principles, such as the principle of purpose limitation under art. 5(1) lett. b) GDPR. Likewise, the principle of storage limitation under art. 5 (1) lett. e) GDPR can be subject to derogations in case personal data are processed for research purposes. As a result, if necessary for research purposes, health data may be stored for longer periods and be employed for wider purposes than would be otherwise allowed under the general data minimization principle¹²².

- 76 Also data subjects' rights as the right to be forgotten under art. 17(3) GDPR and the right to be informed under art. 14(5) lett. b) GDPR can be derogated in case the enactment of the right impairs the achievement of the research objectives¹²³. However, controllers' information duties under art. 13 GDPR remain effective in case the data used for research purposes is directly collected from data subjects, unless, as specified by recital 62 GDPR, "the provision of information to the data subject proves to be impossible or would involve a disproportionate effort".
- 77 The compression of the information controllers have to disclose in the context of research projects sensitively weakens data subjects' control prerogatives over their health data, which under the ordinary data protection regime are addressed by controllers' transparency obligations especially in the privacy notice under art. 14(1) GDPR¹²⁴. The mentioned derogations to controllers' ordinary obligations well reflect the controller-oriented nature of research as a legal basis for processing. These derogations indeed allow the data controller to take full control over the data analysed for research purposes. This transfers the control barycenter onto the processing entities, without the data subjects knowing the conditions under which their health personal data are processed¹²⁵.

122 See art. 5(1) lett. c) GDPR.

123 As observed by some scholars, compliance with the transparency requirements within long data-driven research projects could be disproportionate and substantially impair the objectives of the processing, especially when there are many data subjects involved and the data has been heavily pseudonymised. So Quinn and Quinn (n 114) 1014.

124 Dove (n 108) 1024.

125 Pormeister (n 113)139, observing that "the exceptions from the storage and purpose limitations afforded to the research exemption create an outcome in which consent will become more irrelevant over time in correlation with

78 Additional derogations from the ordinary data protection regime set out by the Regulation can be further provided by Member State law: art. 89(2) GDPR enables Union or Member State law to provide derogations from data subjects' right to access under art. 15 GDPR; right to rectification under art. 16 GDPR; right to restriction of processing under art. 18 GDPR and ultimately the right to object under art. 21 GDPR¹²⁶. Under art.89(2) GDPR, controllers can derogate to these rights when these "are likely to render impossible or seriously impair the achievement of the specific purposes" and the derogations are necessary for the fulfilment of the purpose¹²⁷.

79 In order to counterbalance of these derogations, art. 89(1) GDPR conditions the processing of personal data for research purposes to the enactment of appropriate "technical and organizational measures" needed in order to safeguard "the rights and freedoms of the data subject". A first relevant safeguard is directly mentioned by art. 89(1) GDPR, which refers to pseudonymization of research data.

80 Art. 9(4) GDPR leaves however the definition of such safeguards to Member States' discretion in establishing "further conditions, including limitations, with regard to the processing of genetic data, biometric data or data concerning health". In this perspective, codes of conduct, whose enactment is recommended under art. 40 GDPR could be relevant tools for the establishment of further data protection safeguards for health research. Accordingly, the ultimate degree of the restrictions posed by data

advancements in personal medicine".

126 It must be observed that the possibility granted to national legislations to derogate from the right to object under art. 21 GDPR expressly recalled by art. 89, 2 para GDPR, is to be reconciled with the provision under the same art. 21, 6 para GDPR, affirming the endurance of the right at stake in case of processing carried out for "scientific or historical research purposes or statistical purposes pursuant to art. 89, 1 GDPR". As can be derived from art. 21, 6 para GDPR, derogation to the data subjects' right to object is admitted when "the processing is necessary for the performance of a task carried out for reasons of public interest". This is thus the rule in absence of any national legislation. Conversely, a national legislation can under art. 89, 2 para GDPR derogate to the rule in case the exercise of the right is likely to render impossible or seriously impair the achievement of the specific (research) purposes and in case the restrictions are necessary to fulfil the purpose. Dove (n 108) 1025.

127 Art. 89,2 para GDPR. With regards to processing for scientific purposes, the English Data Protection Bill approved in 2018, has established derogations with regards to the right to access under art. 15 GDPR; to rectification under art. 16 GDPR; to object under art. 21 GDPR.

protection law to the processing of health data will largely depend on how burdensome the conditions and safeguards defined at national level or in codes of conduct will be¹²⁸.

- 81** In the absence of these national determinations, the special regime set by the General Data Protection Regulation for research activities, establishing the above-mentioned derogations to ordinary principles and rules, is directly applicable. The “relaxation of the law” resulting from the traced special data protection regime related to research thus enables businesses to share and thus process health data in the context of digital health-related research projects. This means that the General Data Protection Regulation ultimately appears to encourage health data pools established for research and innovation purposes, rather than curbing them.
- 82** The underlying risk of such special data protection regime is that big data controllers that participate to health data pools end up creating new statistical models based upon users’ special categories of data. These models could in turn facilitate “discrimination by association”¹²⁹ strategies in the broader digital market¹³⁰. In view of the derogations to data subjects’ rights under the data protection regime for research, data subjects would have weaker reaction means with regards to the results of these statistical enquiries¹³¹.
- 83** In this respect, it needs however to be recalled that also in respect to the processing of health data for research purposes, important data subjects’ rights are still applicable. In this perspective, reference needs to be made, in particular, to the right not to be subject to automated decisions under art. 22 GDPR. This right is specifically taken into consideration under the already mentioned recital 162 GDPR, which prohibits the use of personal data in the context of research activities “in support

of measures or decisions regarding any particular natural person”¹³².

- 84** As the recital suggests, thus, processing of personal data carried out for research purposes cannot result in profiling activities and other decisions regarding single natural persons¹³³. This statement is extremely important and poses some interesting normative grounds for interpreting the special data protection regime regarding data-driven research in a way that prevents research processing activities over health data from triggering further, “secondary” commercial actions.
- 85** First solutions in this respect could be found in the realignment of the notion of research relevant under data protection law to public interest-oriented processing purposes. This would imply the re-application of the “full” ordinary data protection law regime, in case health data are further used for commercial purposes, that is, for the commercial employment of the statistical models designed in the context of research projects¹³⁴.

128 Paul Quinn, ‘The Anonymisation of Research Data- a Pyrrhic Victory for Privacy that Should not be Pushed too Hard by the EU Data Protection Framework?’ (2016) 24 *European Journal of Health Law*, 1–21.

129 This term is used by Sandra Wachter, ‘Affinity Profiling and Discrimination by Association in Online Behavioural Advertising’ (2020) 35, 2 *Berkeley Technology Law Journal* (forthcoming), <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3388639>.

130 Giulia Schneider, ‘Disentangling Health Data Networks: A Critical Analysis of Articles 9(2) and 89 GDPR’ (17 September 2019) *International Data Privacy Law* <<https://academic.oup.com/idpl/advance-article/doi/10.1093/idpl/ipz015/5571043?searchresult=1>>.

131 Wachter and Mittelstadt (n 96) 592.

132 In these regards, some clarifications have been provided by the Art. 29 Data Protection Working Party that has identified some examples in which companies carry out processing activities over personal data, without finalising them to individual decisions regarding natural persons, as in the case a business may wish to “classify its customers according to their age or gender for statistical purposes and to acquire an aggregated overview of its clients without making any predictions or drawing any conclusions about an individual. In this case the purpose is not assessing individual characteristics and is therefore not profiling”. So Art. 29 Data Protection Working Party, ‘Guidelines on Automated Individual Decision-Making and Profiling for the Purposes of Regulation 2016/679’ (3 October 2017, last modified 6 February 2018) <https://ec.europa.eu/newsroom/article29/item-detail.cfm?item_id=612053>, 7.

133 Zarsky (n 105) 1008. It must however be said that in the context of big data analytics it is extremely difficult to identify secondary uses. So, Philipp Richter, ‘Big Data, Statistik Und Die Datenschutz-Grundverordnung’ (2016) 40 *Datenschutz und Datensicherheit*, 581, 585, highlighting the difficulties of detecting in which way the statistical models are employed, i.e. for which purposes and by which controllers.

134 Raum (n 117) 41. In this regard, a controller would need to have a different legal basis, such as consent or a task in the public interest, in order to employ a statistical model designed under the statistical research exemption. Stressing this point also, Wachter and Mittelstadt (n 96) 592 ff.

F. Conclusions: Research as an Efficiency Defence for Health Data Pools?

- 86 The above-traced framework leads to deeper considerations regarding the nature of the research exemption regarding the processing of health data under articles 9(2) lett. j); 5(1) lett. b); 6(4) and 89 GDPR within the system of the General Data Protection Regulation.
- 87 First of all, the detachment from the consent/control rule and the direct or possible (based on national legislation) derogation from some of data protection law's principles and data subjects' rights, suggests that the considered research exemption substantiates a regulatory paradigm that is not directly aligned to the General Data Protection Regulation's primary objective of the protection of data subjects' fundamental rights.
- 88 With regards to health data, this last objective is clearly satisfied by the prohibition of processing special categories of data under art. 9(1) para GDPR. As has been illustrated, however, this prohibition results to be largely weakened by the legitimate basis under art. 9(2) lett. j) GDPR that overall comes to liberalize the processing of special categories of personal data, as health data, for the purpose of scientific research.
- 89 This legal basis for the processing of special categories of personal data is characterized by a high degree of intrinsic and extrinsic vagueness¹³⁵: the intrinsic vagueness stems from the difficulties of clearly defining the notion of scientific and statistical research; the extrinsic vagueness is given by the Regulation's deferral of the definition of the conditions of processing for research purposes to Member States' legislation¹³⁶. Under these premises, art. 9(2) lett. j) GDPR appears to ultimately embed a substantially different rationale in respect to the other legal bases for the processing of special categories of data under art. 9(2) GDPR.
- 90 Indeed, the explicit consent under art. 9(2) lett. a) GDPR as a ground for processing is strictly rooted in data subjects' control and self-determination interests. This legal basis thus allows data subjects to autonomously and freely decide over their most

health information, in accordance to the individual fundamental rights of autonomy and dignity.

- 91 Under the public interest-related ground for processing under art. 9(2) lett. g) and i) GDPR, the processing of special categories of personal data is allowed for the achievement of higher societal and collective interests. The processing of special categories of data is in this case justified by higher interests, transcending individual data subjects' autonomy and self-determination expectations.
- 92 Conversely, the regulatory rationale of research as a basis for the processing of special categories of data, seems quite different. The research exemption under arts. 9(2) lett. j); 5(1) lett. b); 6(4) and 89 GDPR appears indeed to be the direct expression of what has been identified above as the second, internal market-oriented, pillar of the General Data Protection Regulation. Exactly in light of the General Data Protection Regulation's objective of promoting the free-flow of information within the internal market, the lawfulness of the processing of health data for research purposes under the mentioned provision can be read as a "safe harbor" for entities processing special categories of data, with the aim of stimulating innovation in data-driven markets, such as health data-driven markets¹³⁷.
- 93 In the practice, this means that the research exemption could work as a sort of efficiency defense under data protection law for the transfer and the processing of health data for research purposes, with subsequent market outcomes. Within the regulatory architecture of the General Data Protection Regulation, the research exemption thus seems to serve the original data protection law's internal market objectives.
- 94 Significant suggestions in this sense are given by recital 157 GDPR, which highlights the very functional nature of research, which is as an essential precondition for the "formulation and implementation of knowledge-based policy", and improves "the quality of life for a number of people" as well as "the *efficiency* of social services"¹³⁸. This holds especially true with respect to research over health data, whose great scientific value render

135 In this regard, Christiane Wendehorst, 'Of Elephants in the Room and Paper Tigers: How to Reconcile Data Protection and the Data Economy' in: Sebastian Lohsse, Reiner Schulze and Dirk Staudenmayer, *Trading Data in the Digital Economy: Legal Concepts and Tools* (Nomos/Hart Publishing, 2017) 327 ff.

136 Stressing this point also Zarsky (n 105) 1009.

137 Stressing a similar point in respect to the nature of the right to data portability, Inge Graef, Martin Husovec and Nadia Purtova, 'Data Portability and Data Control: Lessons from an Emerging Concept in EU Law' (2018) 19, 6 German Law Journal, 1359 ff. and also Graef, Gellert and Husovec (n 84) 16, highlighting that "data portability of Art. 20 GDPR is an example of an innovation policy embedded in data protection law". With regards to the research exemption, see Wachter and Mittelstadt (n 6) 592 ff.

138 Emphasis added.

them extremely important for the design of new products and services in the healthcare sector. In this perspective, the analyzed provisions regarding the processing of special categories of data for scientific and statistical research purposes are to be systemically aligned with other General Data Protection Regulation's provisions that appear to serve similar objectives.

- 95 In these regards, a parallelism emerges between the examined research exemption regarding health data and the right to data portability under art. 20 GDPR. This right has been indeed expressly welcomed by the Commission as a new means of promotion of the data economy, providing the data subject with the right to transfer his/her data from a service provider to another¹³⁹. Through this new right, thus, the data subject acquires an enhanced control over the data shared with businesses¹⁴⁰. Together with control rationales, however, the right to data portability ultimately stimulates data mobility across platforms, through data subjects' impulses¹⁴¹. From this perspective, hence, the right to data portability has been recently recognized by a strand of the literature as a tool for data-innovation and the promotion of the free-flow of personal-information¹⁴². However, the right to data portability is still based on data subjects' control over their data in respect to processing platforms, since the flow of data is enacted only upon the data subjects' determinations. To the very contrary, under the research exemption for the processing of special categories of data under arts. 9(2) lett. j); 5(1)

lett. b); 6(4) and 89 GDPR data subjects appear to be significantly excluded from the control over their processed health data.

- 96 Under these provisions, by establishing a special regime regarding processing activities over health data carried out for research purposes, the General Data Protection Regulation provides normative grounds for incentivising data-driven research activities, in consistency with the European Commission's promotion of digital health and the free-flow of information within the internal market.
- 97 Hence, the General Data Protection Regulation appears to reflect aspects of economic regulation, which ultimately facilitate the creation of a market of personal health data and in this way set the conditions for the efficient functioning of other markets¹⁴³, such as the one for digital medical devices and pharmaceuticals.
- 98 From a regulatory standpoint, thus, the General Data Protection Regulation's research exemption regarding the processing of special categories of personal data appears to be not a *data protection* rule but rather a *rule of the data economy*, which nonetheless addresses data protection concerns, expressed in the requirement of the enactment of safeguards for the respect of data subjects' fundamental rights¹⁴⁴. This acknowledgement leaves open the question whether the safeguards required under arts. 9(2) lett. j) and 89 GDPR for the protection of data subjects' fundamental rights in the context of health data pools and the related research activities are sufficient; or whether there is the need to integrate these with other regulatory safeguards, provided for example by competition law or ethical guidelines.

139 European Commission, 'Commission Staff Working Paper Impact Assessment Accompanying the Document Regulation of the European Parliament and of the Council on the Protection of Individuals with Regard to the Processing of Personal Data and on the Free Movement of such Data (General Data Protection Regulation) and the Directive of the European Parliament and of the Council on the Protection of Individuals with Regard to the Processing of Personal Data by Competent Authorities for the Purposes of Prevention, Investigation, Detection or Prosecution of Criminal Offences or the Execution of Criminal Penalties, and the Free Movement of such Data, SEC (2012) 72/2' (2012) SEC(2012) 72/2 <<https://ec.europa.eu/transparency/regdoc/rep/2/2012/EN/SEC-2012-72-2-EN-MAIN-PART-1.PDF>>, 53.

140 Josef Drexler, 'Data Access and Data Control in the Era of Connected Devices, Study on Behalf of the European Consumer Organisation BEUC' (27 April 2018) Beuc <https://www.beuc.eu/publications/beuc-x-2018-121_data_access_and_control_in_the_area_of_connected_devices.pdf>, para 30.

141 Graef, Gellert and Husovec (n 84) 3.

142 Graef, Husovec and Purtova (n 137) 1396 ff.

143 This is highlighted from a general perspective by Lynskey (n 99) 76-77.

144 For a distinction between the rules regarding data protection and data economy, see Wendehorst (n 135) 332.

Free Speech by Design

Algorithmic protection of exceptions and limitations in the Copyright DSM directive

by **Maxime Lambrecht***

Abstract: Article 17 of the Directive for Copyright in the Digital Single Market imposes on certain platforms an indirect obligation of algorithmic filtering, while providing a plethora of textual safeguards and guarantees for freedom of speech and legitimate uses. We argue however that this traditional approach of formal safeguards and procedural remedies has proved its inability to effectively protect users' rights to benefit from exceptions and limitations to copyright on digital platforms. We suggest an al-

ternative approach, "free speech by design", aimed at embedding a concern for freedom of expression in the design of algorithmic copyright enforcement systems. Informed by CJEU case law (notably the recent *Spiegel Online*, *Funke Medien* and *Pelham* trio), we will assess how such approach can be leveraged to include, in the implementation of the DSM directive, an algorithmic protection for the exceptions for quotation and parody, which are of particular importance for the right to freedom of expression.

Keywords: Copyright; DSM Directive; Digital Single Market; Freedom of expression; exceptions and limitations; by design; Fair balance; Fundamental rights; parody; quotation

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Recommended citation: Maxime Lambrecht, *Free Speech by Design for the Copyright DSM Directive*, 11 (2020) *JIPITEC* 68 para 1.

A. Introduction

1 The recently adopted Directive for Copyright in the Digital Single Market (hereafter "DSM Directive")¹, and its controversial article 17, has triggered many concerns about its impact on fundamental rights,

particularly freedom of speech. How can we ensure that online content-sharing service providers, when implementing (algorithmically assisted) preventive measures imposed by article 17, will preserve the users' right to effectively benefit from exceptions and limitations on copyright?

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2 While the directive provides safeguards to address these concerns, experience with such formal guarantees in earlier legislation provides reasons to doubt their effectiveness. We will discuss the merits of an alternative approach: free speech by design.

1 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 (hereafter DSM directive).

3 With the increasing reliance by private and public actors on algorithmic decision systems², a growing

2 Algorithmic decision systems can be defined as systems relying on the analysis of large amounts of data to infer

number of researchers, public servants, and lawmakers have embraced the approach of regulation “by design”, the idea of embedding public values such as fundamental rights in the design of these systems³. There has been much interest in this “by design” approach in the field of privacy studies (privacy by design)⁴ and of nanotechnologies (safe by design)⁵. Comparatively, it has received relatively little attention in the context of copyright law (except in the debate on anti-circumvention provisions⁶), but interest in the idea has grown with the increasing reliance by online platforms on automatic content recognition technologies for algorithmic copyright enforcement⁷.

- 4 In the context of the ongoing transposition of the DSM directive, we will argue that such algorithmic guarantees of freedom of speech are the best way for Online Content Sharing Providers (OCSSPs)⁸

correlations or, more generally, to derive information to make or influence decision making. Cf. C. Castelluccia and D. Le Métayer, *Understanding algorithmic decision-making: Opportunities and challenges* (2019) Study for the European Parliamentary Research Service.

- 3 A. Cavoukian, “Privacy by Design. The 7 Foundational Principles. Implementation and Mapping of Fair Information Practices” (2009) available at: <<https://perma.cc/CZ37-NZQT>> ; D. K. Mulligan, & K. A. Bamberger “Saving governance-by-design” (2018). *Calif. L. Rev.* 106, 697.
- 4 *Ibidem*.
- 5 Cf. notably M. Hildebrandt, “Saved by Design? The Case of Legal Protection by Design” (2017) *NanoEthics* 11(3), p. 307; I. van de Poel & Z. Robaey, “Safe-by-Design: from Safety to Responsibility” (2017) *Nanoethics*, 11(3), p. 297.
- 6 For a critique of this idea of algorithmic fair use in digital right management systems, see D. L. Burk & J. E. Cohen “Fair use infrastructure for rights management systems” (2001) *Harv. JL Tech*, 15, 41; see also S. Dusollier, “Fair use by design in the European copyright directive of 2001” (2003) *Communications of the ACM*, 46(4), p. 51. The title of the present article is an homage to Dusollier’s article, as we will try to learn the lessons from the “empty promise” of the InfoSoc directive in this regard, and will be especially concerned attentive to the effectiveness of our proposals.
- 7 N. Elkin-Koren, “Fair Use by Design” (2017) *UCLA Law Review* 64. *Contra* Burk, D. L. (2019). *Algorithmic Fair Use. U. Chi. L. Rev.* 86, p. 283; see also P. K. Yu “Can Algorithms Promote Fair Use?” (2020) *FIU Law Review*, p. 14.
- 8 According to art. 2(6) of the directive, an online content-sharing service provider is a “provider of an information society service of which the main or one of the main purposes is to store and give the public access to a large amount of copyright-protected works or other protected

to achieve the twofold obligation from article 17 to make best efforts to “prevent the availability” of unauthorized works⁹ while also not preventing “the availability of works (...) which do not infringe copyright” such works covered by an exception or limitation¹⁰. This interpretation derives from a contextual reading of the directive as well as from recent developments in the CJEU case law and its central paradigm of the fair balance between fundamental rights, which has gradually recognized that exceptions and limitations “confer rights on the users of works or of other subject matter”¹¹ and that their effectiveness is especially crucial for those exceptions which aim to “ensure observance of fundamental freedoms”¹².

Since the exception for quotation or parody are designed as built-in preservations for the right of freedom of speech in our copyright law¹³, it is especially important that preventive measures taken under art. 17(4) do not systematically interfere with the benefit of such exceptions, so as to strike a fair balance between the fundamental rights at stake¹⁴.

- 5 Among commentators, it is commonly held that algorithmic systems “are incapable of (...) applying

subject matter uploaded by its users, which it organises and promotes for profit-making purposes”.

- 9 DSM Directive, art. 17(4) b.
- 10 DSM Directive, art. 17(7) para 1; DSM Directive, art. 17(9), para 2: “This Directive shall in no way affect legitimate uses, such as uses under exceptions or limitations provided for in Union law”. See below, section 4.
- 11 CJEU, C117/13, *Eugen Ulmer* (11 September 2014) para 43; CJEU, C-516/17, *Spiegel Online v. Beck* (29 July 2019), para 54, CJEU, C-469/17, *Funke Medien v. Germany* (29 July 2019), para 70.
- 12 CJEU, C-516/17, *Spiegel Online c. Beck* (29 July 2019), para 57.
- 13 CJEU, C-145/10, *Painer c. Standard VerlagsGmbH e.a.* (1st december 2011), para 134; CJEU, C-516/17, *Spiegel Online v. Beck*, (29 July 2019), para 57. CJEU, C-201/13, *Deckmyn v. Vandersteen et al.* (3 September 2014), para 27; DSM Directive, recital 70.
- 14 For a discussion of the many links between the proportionality principle and the “fair balance” between fundamental rights, see J. Cabay & M. Lambrecht “Les droits intellectuels, entre autres droits fondamentaux: la Cour de justice à la recherche d’un” juste équilibre” en droit d’auteur” (2019) in J. Cabay & A. Strowel (eds), *Les droits intellectuels, entre autres droits*, Bruxelles, Larcier; Angelopoulos, C. “Sketching the outline of a ghost: the fair balance between copyright and fundamental rights in intermediary third party liability” (2015) *Info*, 17(6), 72-96.

context-dependent limitations and exceptions”¹⁵, especially in the context of the exception for parody. Even providers of content recognition technologies seem to agree: “Copyright exceptions require a high degree of intellectual judgment and an understanding and appreciation of context. We do not represent that any technology can solve this problem in an automated fashion. Ultimately these types of determinations must be handled by human judgment”¹⁶.

However, even algorithmically informed human review can create challenges for the effective protection of exceptions and limitations, and there is a risk that legitimate uses will be suspect by default. For this reason, we will examine the possibilities of leveraging these algorithmic systems not only for detecting infringing content but also for preserving uses covered by exceptions and limitations. This will allow us to summarize and try to apply the conditions for the exceptions for quotation and for parody, clarified in the recent CJEU case law¹⁷.

- 6 “Free speech by design” should not be taken as a plea for technological solutionism: it is above all a set of principles to integrate a concern for free speech in the design of algorithmic systems. Therefore, if it turns out that algorithmic systems are incapable of reliably arbitrating the values at stake, such an approach could recommend that they be appropriately curtailed, so as to avoid a systematic interference with the right to freedom of speech.
- 7 As the directive seems mostly intended towards regulating video sharing platforms such as YouTube¹⁸, we will mostly focus on OCSSPs for video content. However, the general approach that

we suggest should be relevant for speech-affecting algorithmic decision systems concerning all types of content.

- 8 After a very brief summary of the goal of article 17 of the DSM directive, we will argue that it is unlikely that it leads to (voluntary) licensing agreements that cover all works (B). This leads to the inevitable application of the “indirect filtering obligation” of article 17(4), which raise many concerns regarding its impact for freedom of expression (C). However, we will show that the numerous formal safeguards and procedural remedies provided by the directive exemplify the traditional approach for protecting exceptions and limitations which, as we will show, has long proved its ineffectiveness (D). We will outline an alternative approach, which we label “Free speech by design” (E). We then discuss how such a Free speech by design approach can inform a more effective protection of exceptions and limitations under the DSM directive, by providing a protection by default in the design of algorithmic systems (F). Finally, we touch upon a few additional points of attention for ensuring the effectiveness of such a free speech by design approach (G).

B. The unlikelihood of all-encompassing licensing agreements

- 9 Article 17 of the DSM directive is intended to address the so-called “value gap” issue¹⁹ but does it in a confusingly complex and oblique way. It

15 A. Bridy, “The Price of Closing the “Value Gap”: How the Music Industry Hacked EU Copyright Reform” (2020) *Vanderbilt Journal of Entertainment and Technology Law* 22(2), p. 356.

16 Fourth meeting of the Stakeholder Dialogue on Article 17 of the Directive on Copyright in the Digital Single Market, *Presentation by Vance Ikezoye* (Audible Magic) (16 December 2019), available at: <<https://webcast.ec.europa.eu/copyright-stakeholder-dialogues-16-12>>; However, the representative added, “identification technologies can supply data, which can be used to supply more informed copyright exception analysis (...)”.

17 Notably CJEU, C-516/17, *Spiegel Online v. Beck* (29 July 2019); CJEU, C-469/17, *Funke Medien v. Germany*, (29 July 2019); CJEU, C-476/17, *Pelham et Haas v. Hütter et Schneider-Esleben* (29 July 2019).

18 See A. Bridy, “The Price of Closing the “Value Gap”: How the Music Industry Hacked EU Copyright Reform” (2020) *Vanderbilt Journal of Entertainment and Technology Law* 22(2).

19 The “value gap” (sometimes “value grab”) refers to the alleged market distortion created by safe harbours provisions for user generated content platforms, leading these platforms to pay less than the market rate for copyright permission; see the study commissioned by the *International Confederation of Societies of Authors and Composers* defending the claims on the existence of a value gap: S. J. Liebowitz (2018). “Economic Analysis of Safe Harbor Provisions”. *CISAC, February, 27*. This “value gap” logic has notably been criticized for relying on a flawed comparison between closed music streaming services and UGC platforms (A. Bridy, “The Price of Closing the “Value Gap”: How the Music Industry Hacked EU Copyright Reform” (2020) *Vanderbilt Journal of Entertainment and Technology Law* 22(2), p. 327), or for its lack of backing by empirical evidence (see G. Colangelo, & M. Maggolino (2018) “ISPs’ copyright liability in the EU digital single market strategy”. *International Journal of Law and Information Technology*, 26(2), 142-159). Others have challenged the underlying idea that “the creation of value should lead automatically to transfer or compensation payments” (“EU Copyright Reform Proposals Unfit for the Digital Age” (24 February 2017), available at: <<https://perma.cc/ZQ3M-XUN5>>.

begins by providing that when OCSSPs give access to the public to protected works, they perform act of communication to the public (17(1)). The text also states that the liability exemption provided by the E-commerce directive should not apply to this act (17(3)), which implicitly requires them to attempt to secure adequate licensing from right holders for any work that could be uploaded by their users.

10 If a work not covered by a licensing agreement is nonetheless communicated, OCSSP can only escape liability by demonstrating that they satisfy the three conditions set forth by art. 17(4), namely that they have:

- (a) *“made best efforts to obtain an authorisation, and*
- (b) *made, in accordance with high industry standards of professional diligence, best efforts to ensure the unavailability of specific works and other subject matter for which the rightsholders have provided the service providers with the relevant and necessary information; and in any event*
- (c) *acted expeditiously, upon receiving a sufficiently substantiated notice from the rightsholders, to disable access to, or to remove from their websites, the notified works or other subject matter, and made best efforts to prevent their future uploads in accordance with point (b).”*

11 While the final text of the directive cleverly omits the words “effective technologies²⁰” mentioned in the original proposal, in practice, preventive measures provided by art. 17(4) b) and c) constitute an indirect algorithmic filtering obligation for OCSSPs, as the massive amount of content uploaded on these platforms every day makes such duties exceedingly costly to carry out through human review²¹. Moreover, as Frosio and Mendis aptly point out, the fact that the best effort obligation must be assessed by reference to industry standards imply that “OCSSPs may even be legally required to employ algorithmic monitoring and enforcement systems” due to evolving technologies or business practices²².

20 Cf. recital 38 of the Proposal for a directive on copyright in the Digital Single Market, 14 september 2016, COM(2016) 593 final.

21 In another paper, we made the very rough estimation that if YouTube wanted to ensure a human review of the 432.000 hours of video uploaded daily, it would have to hire roughly 70.000 full time (very efficient) employees ; M. Lambrecht “La directive européenne sur le droit d’auteur impose-t-elle le filtrage des contenus ?” (2019, May 14). The Conversation, url: <<https://perma.cc/3WV3-TXK3>>.

22 G. Frosio & S. Mendis, “Monitoring and Filtering: European Reform or Global Trend?” (2020) in G. Frosio (ed), Oxford

Therefore in essence, article 17 is a form of algorithmic regulation²³ for copyright enforcement on OCSSPs, delegated by public authorities through a liability regime²⁴.

12 However, in principle, preventive measures provided by art. 17(4) b) and c) are only a last resort, and would not apply at all if OCSSPs were able to secure complete, all-encompassing licensing agreements with all right holders. But what are the odds of this happening? According to some observers, attaining such comprehensive licensing scheme through separate voluntary negotiations between OCSSPs and right holders “is an unobtainable ideal, a myth” as for many types of copyrighted content, very few (if any) Collective Management Organizations exist, and OCSSPs would be faced with the impossible task of licensing with all right holders for any work that could be uploaded by their users²⁵. And it is for this reason that article 17 only imposes a “best efforts” obligation on OCSSPs to obtain such authorization. In other words, preventive measures under 17(4) will most certainly apply to a range of works, for which no authorization has been granted.

13 It should be noted that alternative mechanisms were available to avoid the application of these preventive measures: introducing in the directive a compulsory license for non-commercial uses on online platforms²⁶, or an exception for non-

Handbook of Online Intermediary Liability, Oxford University Press, p 562.

23 Algorithmic regulation can be defined as the use of computational algorithms to achieve “standard-setting, monitoring and behaviour modification”. Cf. M. Hildebrandt, M. “Algorithmic regulation and the rule of law” (2018) *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 376, p. 2.

24 See M. Senftleben “Institutionalized Algorithmic Enforcement – The Pros and Cons of the EU Approach to UGC Platform Liability” (2020) *FIU Law Review* 14 (forthcoming).

25 T. Kreutzer “The EU copyright directive and its potential impact on cultural diversity on the internet – Part I” (2020, January 22) *Kluwer Copyright Blog*, <<http://copyrightblog.kluweriplaw.com/2020/01/22/>>.

26 Ch. Angelopoulos, and J. P. Quintais. “Fixing Copyright Reform.” (2019) *J. Intell. Prop. Info. Tech. & Elec. Com. L.* 10, 147; M. Leistner, & A. Metzger, “The EU Copyright Package: A Way Out of the Dilemma in Two Stages” (2017) *IIC*, 48, 381. Interestingly, the statement by Germany (which voted for the directive) annexed to the council vote also note that “In order to resolve this issue –of how licences can, as far as possible, be concluded for all content on upload platforms – copyright law provides for many other mechanisms besides ‘traditional’ individual licensing (e.g. exceptions and

commercial user-generated content²⁷, along with a fair compensation right, as some have suggested. Even after the adoption of the directive, solutions of this sort are not yet off the table, as the directive itself creates a mechanism of collective licensing with an extended effect (art. 12), and some have argued that member states have a broad margin of discretion to implement statutory licensing or mandatory collective management schemes in the context of art. 17²⁸. While this would be a best-case scenario, the chances are slim that this is going to happen across EU member states, especially with some national implementation already under consideration²⁹.

C. Concerns about the free speech impact of art. 17 indirect filtering obligation

- 14 To say that the DSM directive was a controversial piece of legislation is an understatement. A considerable amount of criticism has centered on article 17 (formerly article 13) of the directive. During the legislative process, concerns about the impact of article 17 for freedom of expression have been raised

limitations, possibly combined with remuneration rights; the option of converting exclusive rights into remuneration rights; the obligation to conclude contracts on reasonable terms” Directive on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC, Statement by Germany, 15 April 2019, 7986/19ADD 1 REV 2.

- 27 Cf. Senftleben, M. “Bermuda Triangle—Licensing, Filtering and Privileging User-Generated Content Under the New Directive on Copyright in the Digital Single Market” (2019) *EIPR*, 41, 480; M. Leistner, & A. Metzger, *op. cit.*; Lambrecht, M., & Cabay, J. “Remix allowed: avenues for copyright reform inspired by Canada” (2016). *Journal of Intellectual Property Law & Practice*, 11(1), 21-36.
- 28 J. P. Quintais, M. Husovec, “How to License Article 17? Exploring the Implementation Options for the New EU Rules on Content-Sharing Platforms” (2019) Working Paper, available at: <<http://dx.doi.org/10.2139/ssrn.3463011>>.
- 29 In France and the Netherlands, an implementation bill is already under consideration in Parliament: Wetsvoorstel houdende wijziging van de Auteurswet, de Wet op de naburige rechten en de Databankenwet in verband met de implementatie van Richtlijn (EU) 2019/PM van het Europees parlement en de Raad van 17 april 2019 inzake auteursrechten en naburige rechten in de digitale eengemaakte markt; *Projet de loi relatif à la communication audiovisuelle et à la souveraineté culturelle à l'ère numérique* (5 December 2019).
- on numerous occasions by researchers³⁰, NGOs, and observers³¹, and the UN Special Rapporteur on the right to *freedom of opinion and expression*³².
- 15 A recurring criticism points that this indirect filtering obligation for all content uploaded on OCSSPs could be in violation with the ban on general monitoring obligations in EU law³³. But
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- 30 S. Stalla-Bourdillon, E. Rosati et al., “A Brief Exegesis of the Proposed Copyright Directive” (24 November 2016), available at: <<http://dx.doi.org/10.2139/ssrn.2875296>>; “EU Copyright Reform Proposals Unfit for the Digital Age” (24 February 2017), available at: <<https://perma.cc/ZQ3M-XUN5>>; “Statement by EPIP Academics to Members of the European Parliament in advance of the Plenary Vote on the Copyright Directive on 12 September 2018” (10 september 2018), available at: <<https://perma.cc/Q6F9-YSXX>> ; J. P. Quintais, G. Frosio, S. Van Gompel, e.a. (2019), “Safeguarding User Freedoms in Implementing Article 17 of the Copyright in the Digital Single Market Directive: Recommendations from European Academics”, *JIPITEC* 10 (3); Senftleben, M., Angelopoulos, C., Frosio, G., Moscon, V., Peguera, M., & Rognstad, O. A. (2018). The Recommendation on Measures to Safeguard Fundamental Rights and the Open Internet in the Framework of the EU Copyright Reform. *European Intellectual Property Review*, 40(3), 149-163; M. Kretschmer, C. Angelopoulos et al. “The Copyright Directive: Articles 11 and 13 must go, Statement from European Academics in advance of the Plenary Vote on 26 March 2019” (2019) *IViR*, <<https://hdl.handle.net/11245.1/8c821080-b06f-4256-b10d-a01e3d0ee29d>>; Romero-Moreno, F. (2019). ‘Notice and staydown’ and social media: amending Article 13 of the Proposed Directive on Copyright. *International Review of Law, Computers & Technology*, 33(2), 187-210.
- 31 EDRI, Open letter (29 January 2019), <<https://perma.cc/SQ87-DLU7>> ; EDRI et al., Open letter (20 May 2019), available at: <<https://perma.cc/23HT-KPRC>> ; V. Cerf et al., “Article 13 of the EU Copyright Directive Threatens the Internet” (12 June 2018) <<https://perma.cc/CZ3C-DYCG>> ; La Quadrature du Net, “Directive Copyright : combattons le filtrage automatisé... et la centralisation du Web !” (12 juin 2018), available at: <<https://perma.cc/3WHS-KBAM>>.
- 32 D. Kaye, Mandate of the Special Rapporteur on the Promotion and Protection of the Right to Freedom of Opinion and Expression (13 June 2018) *OL OTH 41/2018*, available at: <<https://perma.cc/2GF8-2VXM>>.
- 33 As some have argued, even if article 17 is not incompatible with the limited prohibition in article 15 of the E-commerce directive, it might be a violation of the broader ban on general monitoring obligations derived by the CJEU from the fundamental rights paradigm in its *Scarlet* and *Netlog* cases. Cf. K. Grisse, After the storm—examining the final version of Article 17 of the new Directive (EU) 2019/790, *Journal of Intellectual Property Law & Practice*, 14(11), p. 896; CJEU, *C-70/10, Scarlet Extended v SABAM* (24 November 2011); CJEU, *C-360/10, Netlog v SABAM* (12 February 2012). On this

even if it does not, preventive measures imposed by article 17(4) could also create a disproportionate interference with the freedom of speech of users of these platforms³⁴, which would amount to a lack of fair balance between relevant fundamental rights³⁵. Indeed, a number of legitimate uses could be unduly restricted by overreaching algorithmic systems, such as uses covered by exceptions or limitations, or uses of works for whose public domain status cannot be assessed.

- 16 In his opinion, the UN special rapporteur David Kaye raises concerns that the many uncertainties in the text of the directive are inconsistent with the requirement in human rights that restrictions on freedom of speech be “provided by law”, and recalls that Article 19(3) of the International Covenant on Civil and Political Rights provides that to be permissible, they “must not confer unfettered discretion for the restriction of freedom of expression on those charged with its execution”³⁶.
- 17 He adds: “Such uncertainty would also raise pressure on content sharing providers to err on the side of caution and implement intrusive content recognition technologies that monitor and filter user-generated content at the point of upload. I am concerned that the restriction of user-generated content before its publication subjects users to restrictions on freedom of expression without prior judicial review of the legality, necessity and proportionality of such restrictions”³⁷.

subject, see also G. Frosio & S. Mendis, “Monitoring and Filtering: European Reform or Global Trend?” in G. Frosio (ed), Oxford Handbook of Online Intermediary Liability, Oxford University Press.

- 34 Cf. G. Frosio & S. Mendis (2020), *op. cit.*; S. Schwemer and J. Schovsbo, “What is Left of User Rights? –Algorithmic Copyright Enforcement and Free Speech in the Light of the Article 17 Regime “ (2020), in P. Torremans (ed), *Intellectual Property Law and Human Rights*, 4th ed, Wolters Kluwer, (forthcoming); F. Romero Moreno “‘Upload filters’ and human rights: implementing Article 17 of the Directive on Copyright in the Digital Single Market” (2020) *International Review of Law, Computers & Technology*.
- 35 For a thorough interpretation of article 17 in light of CJEU case law on fundamental rights, see J. Cabay, “Lecture prospective de l’article 17 de la directive sur le droit d’auteur dans le marché unique numérique : Vers une obligation de filtrage limitée par la CJUE, garante du « juste équilibre »”, in J. De Werra, Y. Benhamou (eds.), *Propriété intellectuelle à l’ère du big data et de la blockchain*, Université de Genève (forthcoming 2020).
- 36 D. Kaye (13 June 2018) *op. cit.*, p. 7.
- 37 D. Kaye (13 June 2018) *op. cit.*, p. 7.

D. The traditional approach: formal safeguards and procedural remedies

- 18 To address the many concerns about users’ rights and freedom of expression expressed during the legislative process, the final drafting of article 17 has gradually evolved to include several legal safeguards:

- Article 17(7), para 1 states that “The cooperation” envisaged by art. 17(4) “shall not result in the prevention of the availability of works or other subject matter uploaded by users, which do not infringe copyright and related rights, including where such works or other subject matter are covered by an exception or limitation”. Unfortunately, the provision does not explicitly mention demonetization, which is a frequent measure taken by OCSSPs (especially YouTube) in case of matching of copyrighted content³⁸.

- Article 17(7), para 2 provides that “Member States shall ensure that users in each Member State are able to rely on any of the following existing exceptions or limitations when uploading and making available content generated by users on online content-sharing services: (a) quotation, criticism, review; (b) use for the purpose of caricature, parody or pastiche.”

- Art. 17(9), para 3 repeats that “ This Directive shall in no way affect legitimate uses, such as uses under exceptions or limitations provided for in Union Law”

- Article 17(8), para 1 states that “The application of this Article shall not lead to any general monitoring obligation” (although this looks more like a pre-emptive defense against complaints that art. 17(4) violates the ban on general monitoring obligation famously upheld by the CJEU in its two SABAM cases³⁹).

- Art. 17(9), para 2 and 3 provide a “complaint and redress mechanism” available to users in the event of disputes over the removal or access disabling of the content they uploaded. But again, there is no explicit mention of demonetization, despite its potentially important effects on the income of small speakers and creators.

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- 38 Under the “YouTube Content ID” system, in case of content matching, rightholders are offered a choice not only to takedown the video, but either disable its eligibility for advertising, or claim all advertising revenues.

- 39 CJEU, C-70/10, *Scarlet Extended v SABAM* (24 November 2011); CJEU, C-360/10, *Netlog v SABAM* (12 February 2012).

- The compliance of OCSSPs with their obligations under 17(4) must be assessed “in light of the principle of proportionality” (art. 17(5))

- 19 Should all these guarantees be sufficient to allay the concerns that we mentioned⁴⁰? In themselves, these safeguards clauses are indeed welcome. In particular, the mandatory character given to the exceptions for quotation and parody is long overdue, as the lack of harmonization of exceptions and limitations has been a recurrent criticism⁴¹ of the InfoSoc directive⁴², an issue which the CJEU has repeatedly attempted to remedy in its case law⁴³. Similarly, creating a complaint and redress mechanism for copyright takedowns is certainly a useful addition, which probably should have been included already in the liability regime created by the 2000/31 E-Commerce directive, as the US legislator did by providing a “counter-notice” system in the DMCA notice and takedown regime.
- 20 To analyse the adequacy of these provisions to address concerns for the effective protections of exceptions and limitations, it is interesting to compare them with the safeguard provision in art. 6(4) of the InfoSoc on technical protection measures (TPM)⁴⁴, which – ironically for our argument – had been dubbed at the time as attempting to achieve a sort of “fair use by design”⁴⁵.

40 See *supra*, Section C.

41 B. Hugenholtz, *et al.* Why the copyright directive is unimportant, and possibly invalid. *European Intellectual Property Review*, 2000, vol. 22, no 11, p. 499; L. Guibault, “Why Cherry-Picking Never Leads to Harmonisation: The Case of the Limitations on Copyright under Directive 2001/29/EC”, *JIPITEC* 1(2), p. 55; M.-C. Janssens “The issue of exceptions: reshaping the keys to the gates in the territory of literary, musical and artistic creation” (2009) In *Research handbook on the future of RU copyright*. Edward Elgar, Cheltenham, p. 317.

42 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 (hereafter InfoSoc directive).

43 R. Xalabarder, “The role of the CJEU in harmonizing EU copyright law.” (2016): 635-639; J. Cabay, & M. Lambrecht (2019), *op. cit.*, p. 304.

44 TPM are a form of algorithmic regulation implemented by rightsholders to control access to their work, prevent unauthorized copying or protect rights management information.

45 S. Dusollier, « Fair use by design in the european copyright directive of 2001: an empty promise », *International Review of Intellectual Property and Competition Law* 34(1), 2003, n°1, p. 62.

21 The goal of Article 6(4), para 1 of the InfoSoc directive was to avoid technical overreaching by rightsholders, by protecting exceptions and limitations in the design of TPMs. However, this byzantine provision had many defects: it confined member states in a subsidiary role, only entitled to take “appropriate measures” “in the absence of voluntary measures taken by rightsholders”, provided for arbitrary limitations to its scope⁴⁶, and failed to specify the sort of measures that were required, or provide any guarantee of effectiveness for these measures.

22 Unsurprisingly, this provision proved to be nothing more than an “empty promise”⁴⁷. Not only were voluntary measures by rightsholders rare (or non-existent), but implementation measures from member states were mostly toothless, such as the purely declaratory provision in the French DAVDSI law, stating that “Technological measures may not prevent the free use of the work or protected object (...)”⁴⁸. Remarkably, even the ambitious Belgian transposition, which created a broad right of action against copyright holders to order them to allow the benefit of exceptions and limitations, open to consumer interest groups or the Minister responsible for copyright⁴⁹, proved ineffective: from all available records, fifteen years after its adoption, this extraordinary procedural remedy was never set in motion⁵⁰.

23 So, the traditional approach for safeguarding freedom of speech mostly relies on either formal, declaratory guarantees, or procedural ones. Criticisms on the insufficiency of such formal and procedural safeguards are abundant in the last 15 years of literature on copyright takedown by digital intermediaries, under the European E-commerce

46 Indeed, not only did art. 6(4) only apply to certain exceptions and limitations (para 1), but it also excluded from its scope “works communicated online from its scope “works or other subject matter made available to the public on agreed contractual terms in such a way that members of the public may access them from a place and at a time individually chosen by them” (para 4), i.e. works communicated “on-demand”, or online.

47 *Ibidem*.

48 Article L331-5, para 6, of the French Intellectual Property Code: « Les mesures techniques ne peuvent s’opposer au libre usage de l’œuvre ou de l’objet protégé dans les limites des droits prévus par le présent code, ainsi que de ceux accordés par les détenteurs de droits. »

49 Art. XI. 336 of the Code of Economic Law.

50 To the best of our knowledge, confirmed by private correspondence with the Ministry of Economy.

Directive⁵¹ and the US DMCA notice-and-takedown mechanism⁵². To summarize, the main issues highlighted by the literature have been:

- The power imbalance between copyright holders and users has led intermediaries to be overzealous enforcers, often granting questionable (or even abusive) takedown requests by right holders to avoid litigation⁵³
- Moreover, even when users have the right to challenge a takedown decision through private

redress mechanism or a judiciary action, they tend not to use it, possibly through lack of information or through fear of the costs of potential litigation⁵⁴

- Finally, some intermediaries have already set up algorithmic systems to detect and block copyright-infringing content (e.g. YouTube Content ID, Vimeo Content Match⁵⁵), and those tend to be mostly designed efficiently to detect copyright infringement, without much (or at least not explicit⁵⁶) concern for legitimate uses covered by L&E⁵⁷

51 Directive 2000/31/EC on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (“E-Commerce”).

52 17 U.S. Code § 512.

53 Although this field is difficult to study due to the “black box” effect of such takedown systems, a number of studies have identified evidence of significant erroneous or excessive takedown requests: J. M. Urban & L. Quilter, “Efficient Process or ‘Chilling Effects’? Takedown Notices Under Section 512 of the Digital Millennium Copyright Act” *Santa Clara Computer and High Technology Law Journal*, Vol. 22, 2006, p. 621; J. M. Urban B. L. Schofield, & J. Karaganis (2017). Takedown in Two Worlds: An Empirical Analysis. *J. Copyright Soc’y USA*, 64, 483; S. Bar-Ziv & N. Elkin-Koren, “Behind the Scenes of Online Copyright Enforcement: Empirical Evidence on Notice & Takedown”, *Connecticut Law Review*, 50(2), 2017 (studying 10 000 google search removal request, and showing a 10% rate of questionable copyright request); J. M. Urban, L. Quilter, “Efficient Process or Chilling Effects - Takedown Notices under Section 512 of the Digital Millennium Copyright Act”, 22 *Santa Clara High Tech. L.J.* 621 (2006); (2006); D. K. B. Seng, (2015). ‘Who Watches the Watchmen?’ An Empirical Analysis of Errors in DMCA Takedown Notices. Working paper, available at: <<http://dx.doi.org/10.2139/ssrn.2563202>> (although only examining substantive errors indirectly, the author sees evidence of “a “configure and forget” approach on the part of the reporters, an absence of manual review and a lack of rigorous oversight of the entire takedown process and its aftermath”); Nas, S. “The Multatuli project: ISP notice & take down”. In 4th international system administration and network engineering conference, Amsterdam, (small scale study of bogus takedown of public domain works on Dutch ISPs); J. M. Urban & L. Quilter, “Undue Process: Challenges for Rightsholders and Service Providers Implementing Section 512’s Notice and Takedown Provisions”, 2009; Tushnet, R. (2016). “Fair Use’s Unfinished Business”. *Chi.-Kent J. Intell. Prop.*, 15, 399 (showing anecdotal evidences of politically motivated copyright takedown request); R. Tushnet, “Power without responsibility: Intermediaries and the First Amendment”, *Geo. Wash. L. Rev.* 76 (2007); S. Kreimer, “Censorship by proxy: the first amendment, Internet intermediaries, and the problem of the weakest link”, *University of Pennsylvania Law Review* 155.1 (2006).

24 Far from being solved, these issues are further exacerbated under art. 17 of the DSM directive for a number of reasons:

25 First, the direct liability for copyright infringement stemming from art. 17, combined with the vagueness of the “best effort” obligations imposed by 17(4) will probably induce OCSSPs to set up stricter algorithmic monitoring systems than those already existing, to avoid costly litigation. This could go as far as automatically blocking all unauthorized uses

54 J. Urban, J. Karaganis, & B. Schofield, “Notice and Takedown in Everyday Practice” (March 22, 2017). UC Berkeley Public Law Research Paper No. 2755628, p. 44; Bridy, A., & Keller, D. (2016) “US Copyright Office Section 512 Study: Comments in Response to Notice of Inquiry”. Available at: <<http://dx.doi.org/10.2139/ssrn.2757197>> ; S. Bar-Ziv and N. Elkin-Koren. “Behind the Scenes of Online Copyright Enforcement: Empirical Evidence on Notice & Takedown” (2018) *Conn. L. Rev.* 50(2), p. 339; D. K. B. Seng, (2015)., op. cit.

55 Whereas YouTube has developed its own algorithmic solution, many other platforms, such as Vimeo or Facebook, have contracted with Audible Magic for their content matching systems Cf. Facebook, “What tools does Facebook provide to help me protect my intellectual property in my videos?”, available at: <<https://perma.cc/47V3-UACC>>; “How to Register Content With Audible Magic” (28 May 2014) Audible Magic Blog, available at: <<https://perma.cc/6QVF-D5HH>> ; Cf. also A. Bridy, “Copyright’s digital deputies: DMCA-plus enforcement by Internet intermediaries” (2016) In *Research Handbook on Electronic Commerce Law*. Edward Elgar Publishing.

56 As we will see, a recent modification by YouTube of its Content ID policy constitutes a step in disclosing some explicitly thresholds for admitted reuse of content, which could be seen as an implicit protection of certain uses covered by exceptions or limitations. See *infra*, 5.1, note 94 and accompanying text.

57 Solomon, L. (2015). “Fair Users or Content Abusers: The Automatic Flagging of Non-Infringing Videos by Content ID on YouTube”, *Hofstra L. Rev.*, 44, 237; M. Perel & N. Elkin-Koren. “Accountability in Algorithmic Copyright Enforcement” (2015) *Stan. Tech. L. Rev.* 19, p. 473.

of copyright-protected works signalled by right holders under 17(4), regardless of whether such uses are covered by an exception or limitation.

- 26 Second, OCSSPs, which are responsible for setting up the complaint and redress mechanism required by art. 17(9), lack the qualities of independence and impartiality and accountability for such private adjudication⁵⁸. Due to the power imbalance between copyright holders and users, they are likely to continue to allow abusive takedown requests for fear of legal liability⁵⁹.
- 27 Third, in any case, the complaint and redress mechanism provided by art. 17(9) will likely remain ineffective: given the rarity of user's appeal against takedown decisions, and the scarcity of NGOs capable of defending users' rights through litigation, it is plausible that they will mostly remain unchallenged.
- 28 Fourth, even if users do exercise their right to appeal a blocking decision, the fact remains that they will suffer from an *ex ante* restriction on their freedom of speech. Such technically enforced prior restraint is the most extreme and problematic restriction on speech⁶⁰, as it avoids the public scrutiny incurred by standard judicial procedures, and shifts the burden of inaction on the speaker, as no communication can occur until permission is granted⁶¹. For some creators on UGC platforms, the blocking of their content during a month-long appeal process can have a substantial impact on their income⁶².
- 29 Fifth, even if algorithmic systems are only used for purposes of flagging suspect uses, and human review is guaranteed before any preventive measure is enforced, there are reasons to doubt that this will lead to a proportional application of the law. Indeed, not only would all quotative and transformative uses be considered suspect by default, a framing which might lead to excessively strict scrutiny, but such human review might be biased by the algorithmic assessment: according to recent research, it seems

that under certain circumstances people tend to better trust algorithmic than human judgments⁶³.

- 30 So, in theory, the principles and safeguards enshrined in the directive, such as the proportionality principle, the right to access to court or the acknowledgment of users' rights, are all perfectly sound. However, in practice, all these sound principles acknowledged in the text are likely to remain unheeded in its day-to-day application, unless the CJEU ends up clarifying or striking down the mechanism in its judicial review⁶⁴.
- 31 But despite the risks it poses, this implicit filtering requirement by art. 17 of the DSM directive can also be seen as an opportunity to improve the effective protection of exceptions and limitations.
- 32 Indeed, the effectiveness of exceptions and limitations is an important goal for EU copyright law. In a series of decisions, the CJEU stressed that "exceptions or limitations do themselves confer rights on the users of works or of other subject matter", and that it is of "particular importance" that the interpretation of such exceptions or limitations allow "their effectiveness to be safeguarded and their purpose to be observed" where their aim is "to ensure observance of fundamental freedoms". This is notably the case for the quotation exception, which is "aimed at favouring the exercise of the right to freedom of expression by the users of protected subject matter and to freedom of the press"⁶⁵, or for the exception for parody, on which users rely to

58 D. Kaye (13 June 2018) p. 8.

59 Cf. S. Kreimer (2006), *op. cit.*

60 According to the European Court of Human rights "the dangers inherent in prior restraints are such that they call for the most careful scrutiny on the part of the Court"; European Court of Human Rights, *Observer and Guardian v. United Kingdom* (26 november 1991), para 60.

61 J. M. Balkin, "Old School/New School Speech Regulation" (2014) *Harvard Law Review*, Vol. 127, p. 2316-2317.

62 See S. Wodinsky. "YouTube's Copyright Strikes Have Become a Tool for Extortion" (11 Feb. 2019) *The Verge*, <<https://perma.cc/GKS3-P59D>>.

63 J. M. Logg, J. A. Minson, & D. A. Moore "Algorithm appreciation: People prefer algorithmic to human judgment" (2019) *Organizational Behavior and Human Decision Processes*, 151, 90-103; Underhaug, M., & Tonning, H. *In bots we (dis) trust?* (2019) (Master's thesis, University of Stavanger, Norway), available at: <<http://hdl.handle.net/11250/2618905>> ; Contra B. J. Dietvorst, J. P. Simmons, & C. Massey "Algorithm aversion: People erroneously avoid algorithms after seeing them err" (2015) *Journal of Experimental Psychology: General*, 144(1), 114 (however, according to Logg et al. : " in the control conditions of the Dietvorst et al. studies, participants chose the algorithm's judgment more frequently than they chose their own (or another person's)"); According to Castelo et al., trust in algorithms depends on the perceived objectivity of a given task; however, such perceived objectivity is malleable, and framing can play an important role; cf. Castelo, N., Bos, M. W., & Lehmann, D. R. "Task-dependent algorithm aversion" (2019) *Journal of Marketing Research*, 56(5), p. 809-825.

64 See e.g. the action brought by Poland seeking partial annulment of article 17: CJEU, C-401/19, *Republic of Poland v European Parliament and Council of the European Union*.

65 CJEU, C-516/17, *Spiegel Online v. Beck*, (29 July 2019), para 57; see also C.J.U.E., C-145/10, *Painer c. Standard VerlagsGmbH e.a.* (1st December 2011), para 134.

exercise their freedom of expression⁶⁶. The preamble of the directive also explicitly recognize that certain exceptions and limitations “guarantee the freedom of expression of users”, and the importance of the exception of quotation and parody for striking a fair balance between freedom of expression and freedom of the arts and the right to intellectual property⁶⁷.

- 33 And since under the directive such filtering mechanisms are now legally required (although indirectly), rather than being mere voluntary measures, there is no question that they must strive to reach a fair balance between fundamental rights. This requirement includes respecting the effectiveness of the exceptions and limitations which are a condition of the effective exercise of fundamental rights, such as the exception for quotation and for parody. Therefore, we argue that national implementations of the DSM directive, as well as the Commission guidance for its application,⁶⁸ should ensure that such balance is effectively achieved in the design of their algorithmic decision systems, by requiring OCSSP to follow a “Free speech by design” approach.

E. An alternative approach: free speech by design

- 34 The “by design” approach, which inspired the GDPR⁶⁹, has been popularized by the work of the Privacy Commissioner of Ontario, which devised a set of principles aimed to “proactively embed privacy into the design specifications of information technologies, organizational practices, and networked system architectures”⁷⁰. Transposing those principles to the issue at hand, we could formulate the following four principles⁷¹:

Preventive, not Remedial: anticipate and prevent free speech-invasive events before they happen.

Free speech Embedded into Design: Free speech should be embedded into the design and architecture of IT systems and business practices.

Integrate all legitimate interests: all interests should be balanced in a way that maximize their level of protection, such as the protection of the right to intellectual property and the right to freedom of expression and information⁷²

Visibility and Explainability: ensure that the technology involved is in fact operating according to the stated promises and objectives, subject to independent verification. The use of speech-affecting technologies, such as algorithmic copyright enforcement systems, should be both visible and explainable (rather than merely transparent) to users and rightsholders.

- 35 Of course, the idea is not to exclusively (or even primarily) protect freedom of speech, but to integrate all legitimate interests, and fundamental rights in particular⁷³. Free speech by design is thus a subset of “human rights by design”, but for the purpose of this article we want to emphasize the need to effectively protect freedom of speech in the DSM directive.
- 36 These principles have many ramifications, but one direct implication of this approach is that embedding free speech in the design of copyright algorithmic systems means preventing systematic *ex ante* interferences with the benefit of exceptions and limitations, rather than just providing an *ex post* remedy. Indeed, the prevention principle should apply to both rightsholders against infringement of their rights and users against interference in their freedom speech .
- 37 A free speech by design approach implies that algorithmic systems used for compliance with art. 17(4) should be designed not merely for detecting potentially infringing works, but also for minimizing the interference with potentially legitimate uses by users covered by an exception or limitation. In other words, algorithms should protect exceptions and limitations by default.

66 CJEU, C-201/13, *Deckmyn v. Vandersteven et al.* (3 September 2014), para 27.

67 DSM Directive, Recital 70.

68 See DSM Directive, art. 17(10).

69 Cf. recital 78 of the Regulation 2016/679 General Data Protection Regulation (GDPR).

70 A. Cavoukian (2009), op. cit.

71 Here we paraphrase A. Cavoukian (2009), op. cit.

72 Note that for the purpose of this article, we are avoiding dwelling into the highly contentious issue of which of the protection of free speech or of intellectual property rights are the principle, and which is the exception. We have developed elsewhere our answer to that question, based on a normative theory inspired by liberal egalitarian framework, as well as on the specific status of the right to property protected by international and European human rights instruments. Cf. M. Lambrecht, *Licences ouvertes et exceptions au droit d'auteur dans l'environnement numérique. Subvertir ou réformer ?*, Brussels, Larcier, 2018 ; for a similar approach, see A. Peukert, *A Doctrine of the Public Domain*, in J. Drexler and A. K. Sanders, *The Innovation Society and Intellectual Property*, 2019, Edward Elgar, p. 117.

73 Similarly, see D. K. Mulligan & K. A. Bamberger (2018) p. 704.

- 38 This objective of protecting the effective enjoyment of exceptions and limitations by default can be justified by a contextual or systematic reading of the directive⁷⁴, which supports the idea that OCSSPs have a twofold obligation regarding preventive measures under 17(4) b. and c.
- 39 Indeed, the “best efforts” obligation under 17(4) b. and c. should be read jointly with art. 17(7) para 1, which states that this “cooperation” between OCSSP and rightsholders “shall not result in the prevention of the availability of works or other subject matter uploaded by users, which do not infringe copyright, including where such works or other subject matter are covered by an exception or limitation”, as well as art. 17(9), para 3, which states that “This Directive shall in no way affect legitimate uses, such as uses under exceptions or limitations provided for in Union law”. Moreover, as we mentioned, the OCSSPs’ obligation to ensure the unavailability, or prevent future uploads of infringing works must be assessed under the principle of proportionality, which notably entails that it should not unnecessarily limit the users’ rights (necessity)⁷⁵ and that the harm for user’s fundamental rights should be proportionate to the benefits of the measure for the protection of IP rights (proportionality *stricto sensu*)⁷⁶.
- 40 It is also interesting to note that the second part of this twofold obligation is worded not as a mere best efforts obligation, but in much stronger terms, tending towards an obligation of results (art. 17(7), para 1 : “shall not result in the prevention of the availability” of non-infringing works). Finally, the phrasing of art. 17(7), para 2 suggests an obligation for member states not merely to implement the exception for quotation and parody, but an obligation to actively ensure the effectiveness of such exceptions in the context of uploading content on OCSSP: rather than using the phrasing of the InfoSoc directive, that certain acts “shall be exempted” from a given exclusive right, or that “Member States may provide for exceptions or limitations... in the following cases”, art. 17(7), para 2 states much more actively that: “Member States shall ensure that users in each Member State are able to rely on any of the following existing exceptions or limitations when uploading and making available content generated by users on online content-sharing services (...)”. Some have interpreted this wording as giving rise to a subjective right to enforce those exceptions or limitations⁷⁷. Moreover, the Commission recently confirmed that “any obligation directed at OCSSPs should be properly implemented in national law”, and therefore that the obligation provided by art. 17(7) and 17(9) “must be given effect to by Member States in their implementing legislation” and cannot be considered fulfilled “by Member States by seeking to rely on any general provision informing users about existing exceptions and limitations in the terms of use of the OCSSPs”⁷⁸, as was the case in the French implementation bill⁷⁹.
- 41 Therefore, under such a contextual reading of article 17, where article 17(4) is read jointly with article 17(7), 17(9) para 3 and in light of the principle of proportionality, art. 17(4) should be understood as imposing a twofold obligation for OCSSP to both “prevent the availability” of unauthorized works while also not preventing “the availability of works⁸⁰ (...) which do not infringe copyright”, such as uses covered by an exception or limitation.
- 42 This line of interpretation is further reinforced by the relatively weak case for the necessity of the interference by article 17(4) with the fundamental rights of users of OCSSPs, since there were clearly other, less restrictive means available to the EU lawmaker to achieve the same purpose, among
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- 74 See K. Lenaerts, “To say what the law of the EU is: methods of interpretation and the European Court of Justice” (2013), *Colum. J. Eur. L.* 20(3); see also K. Lenaerts, K., & J. A. Gutiérrez-Fons, (2020). *Les méthodes d’interprétation de la Cour de justice de l’Union européenne*, Brussels, Bruylant.
- 75 Or, under the strict necessity criterion adopted by the CJEU in its “Sky Österreich” case, that it should adopt the least restrictive (or “least onerous”) means: CJEU, C-283/11, *Sky Österreich GmbH v. Österreichischer Rundfunk* (22 January 2013), para 50.
- 76 Cf. R. Alexy, “Constitutional Rights and Proportionality” (2014) *Revus* (22)51; R. Alexy, “Constitutional Rights, Balancing, and Rationality” (2003) *Ratio Juris* 16(2), p. 131.
- 77 G. Spindler, “The Liability system of Art. 17 DSMD and national implementation – contravening prohibition of general monitoring duties?” (2019) *JIPITEC* 10(3), at 130.
- 78 European Parliament, Answer given by Ms Gabriel on behalf of the European Commission, E-002681/2019(ASW), <<https://perma.cc/3MTJ-6V9E>>.
- 79 Cf. *Projet de loi relatif à la communication audiovisuelle et à la souveraineté culturelle à l’ère numérique* (5 december 2019), art. 16.
- 80 Taking inspiration from Garstka, we suggest here that the notion “preventing the availability” of works be interpreted broadly, so as to also include demonetization decisions, due to the significant impact such decisions can have on the freedom of expression and the right to intellectual property of small creators. See K. Garstka, “Guiding the Blind Bloodhounds: How to Mitigate the Risks art. 17 of Directive 2019/790 Poses to the Freedom of Expression” in P. Torremans (ed) *Intellectual Property and Human Rights* (4th ed), Wolters Kluwer Law & Business (forthcoming).

which are an UGC exception or compulsory license⁸¹ or an obligation for member states to implement extended collective licenses for uses of copyrighted works on OCSSPs. Under such a scheme, there would have been no need for imposing a form of prior restraint on users' fundamental right to freedom of expression through the complex mechanism provided by art. 17(4) b. and c. So, an interpretation of article 17(4) in light of the fundamental rights paradigm⁸² strengthens the importance of reading it as imposing a twofold obligation, which calls for protecting exceptions and limitations by default.

F. Protecting exceptions and limitations by default

- 43 As we argued, to avoid having to sacrifice effective protection of uses covered by exceptions and limitations for the sake of effective detection of infringing works uploaded on OCSSP, algorithmic systems used for copyright enforcement should be designed so as to protect exceptions and limitations by default. In other words, algorithmic systems should be designed to detect not only infringing uses, but also uses that should be considered as covered by an exception or limitation, and exclude them from any automated flagging or takedown.
- 44 Ideally, Member states should explicitly provide in their national implementation of the DSM directive an obligation for OCSSPs to design their algorithms so as to avoid affecting content that could be considered as presumably covered by an exception. However, even if Member states fail to specify OCSSPs' duties in that regard, this "protection by default" approach for exceptions and limitations should nonetheless be followed by OCSSPs, as it can be interpreted as stemming from their twofold obligation to both "prevent the availability" of unauthorized works while also not preventing "the availability of works (...) which do not infringe copyright" under a contextual reading of art. 17(4) and 17(7) & (9).
- 45 Of course, the fact that most exceptions and limitations provided by EU law are facultative is a challenge for applying this approach to OCSSPs with a pan-European audience. However, we will mostly avoid this difficulty since we will only focus on the quotation and parody exceptions, which have been made mandatory by art 17(7) para 2 of the DSM directive. Moreover, the CJEU has also largely harmonized these two exceptions in its recent case

law⁸³

- 46 We will discuss two methods to achieve an algorithmic protection of exceptions and limitations: the first implies establishing "bright-line" rules for a deterministic assessment of uses presumably covered by an exception; the second involves training Machine Learning algorithms to assess the existing legal standards for the application of exceptions and limitations.

I. Two methods for an algorithmic protection of exceptions and limitations:

- 47 In her article on "Fair use by design", Niva Elkin-Koren envisages two different ways for achieving an algorithmic assessment of fair use: the first consist in "Programming [certain] factors into an automated process" by translating them "into a set of instructions that can be executed on certain data sources"⁸⁴, and the second in training machine learning algorithms to assess factors "which involves the exercise of judgment"⁸⁵.
- 48 This distinction overlaps pretty well with the distinction between rules and standards. Simply put, a rule "binds a decisionmaker to respond in a determinate way to the presence of delimited triggering facts"⁸⁶, while a standard "allow the decisionmaker to take into account all relevant factors or the totality of the circumstances", turning decision-making into an application of the underlying policy to a factual situation⁸⁷. However, this distinction should be seen more like a continuum than a binary dichotomy⁸⁸.

83 Cf. CJEU, C-201/13, *Deckmyn*, para 14 (considering the notion of parody as an autonomous concept of EU law); Cf. also Quintais et al, (2019) op. cit., arguing that the notion of quotation should also be interpreted as an autonomous concept of EU law, following the cases *Painer* (C-145/10), *Funke Medien* (C-469/17), *Pelham* (C-467/17) and *Spiegel Online* (C-516/17).

84 N. Elkin-Koren, "Fair Use by Design" (2017) *UCLA L. Rev.*, vol. 64, p. 1095.

85 N. Elkin-Koren, "Fair Use by Design", op. cit., p. 1097.

86 K. M. Sullivan (1992), op. cit., p. 58.

87 K. M. Sullivan (1992), op. cit., p. 58.

88 See K. M. Sullivan, "Foreword: The justices of rules and standards" (1992) *Harv. L. Rev.* 106, p. 22; M. J. Radin, "Presumptive Positivism and Trivial Cases" (1991) *Harv. JL &*

81 See supra, Section B, notes 21-22.

82 See J. Cabay & M. Lambrecht (2019), op. cit.

- 49 The more rule-like a legal directive is, the easier is its transposition into a deterministic algorithm: a set of computer-executable instructions, which, given the same input, will always produce the same output. Some rules are so determinate that they can almost directly be automated, as speed limits (the classic example of rules⁸⁹) have historically been. Others have to be ruled beforehand, in order to eliminate their indeterminacy into a set of more or less complex sub-rules.
- 50 Of course, the more standard-like a legal directive is, the more difficult is its transposition into a deterministic algorithm. By definition, its indeterminacy precludes its rulification. In such a case, resorting to probabilistic deep learning algorithms appears like a more promising avenue. However, one should resist ceding to technological solutionism, and having excessive expectations in the ability of technology to resolve questions that have vexed lawyers (or philosophers) for a very long time.
- 51 This leads to two conceivable methods for an algorithmic assessment of uses covered by exceptions and limitations: simplifying conditions for exceptions or limitations into easily-automated “bright-line” rules (which should ideally be set up by public authorities, as we will see later), or training machine learning algorithms to predict the correct application of standards used to define such exceptions or limitations. In other words, either providing a simplified version of legal norms for their algorithmic application, or training algorithms to try to emulate their correct application. As we’ll see, these two methods, while conceptually distinct, can be used complementarily.

1. The deterministic method: rulifying exceptions and limitations

- 52 The first method for an algorithmic protection of exceptions relies on spelling out “bright-line” easily assessed conditions to support a presumption that certain uses are covered by an exception or limitations.
- 53 The expression “bright-line rules” echoes various efforts that have been made in the US to provide guidelines for the application of the US fair use doctrine⁹⁰, a notoriously flexible but also (not

necessarily for this reason) rather unpredictable standard⁹¹. We readily acknowledge that these efforts have mostly been unsuccessful, notably due to a sceptical reception by courts, who considered such guidelines as contrary to the flexible nature of fair use, as they promoted a mathematical approach to fair use, rather than the case-by-case analysis favoured by courts⁹².

- 54 However, our proposal remains fairly modest, and therefore its acceptability should be an easier matter. First, because we are not proposing hard “safe harbours” that would definitely shield users from litigation, but merely thresholds that ground a presumption that automated detection system must respect; being a presumption, it could be reversed by “duly justified”⁹³ targeted human takedown requests⁹⁴. Second, because we’re not proposing guidelines for the application of exceptions and limitations in general, but only for a subset of uses i.e. works communicated to the public through OCSSPs. Finally, our endeavour seems more accessible because the closed systems of exceptions in article 5 of the InfoSoc directive is more specific, and arguably more rule-like, than the US fair use standard.
- 55 Moreover, it is inevitable that platform operators rely on simplified rules approximating the application of the exceptions and limitations framework for the purposes of algorithmic systems, even if it is only implicitly. Indeed, the simple selection of a similarity threshold, to avoid generating too many false positives, implies relying on a particular reading of the law⁹⁵. This is apparent from the recent

stakeholders and annexed to (but crucially not incorporated into) the 1976 copyright act Agreement on Guidelines for Classroom Copying in Not-for-Profit Educational Institutions with Respect to Books and Periodicals, H.R. Rep. No. 94-1476, at 68-70 (1976), as reprinted in 1976 U.S.C.C.A.N. 5659, 5681-83; More generally, see Parchmovsky, “Fair Use Safe Harbors”, *Virginia Law Review* 93(6), 2007, p. 1483.

Pub. Pol’y 14, p. 823.

89 Cf. F. Schauer, “The Tyranny of Choice and the Rulification of Standards.” *J. Contemp. Legal Issues* 14 (2004), p. 803.

90 See for example the “Classroom guidelines” negotiated by

91 See e.g. B. Beebe, (2007). “An empirical study of US copyright fair use opinions, 1978-2005”. *U. Pa. L. Rev.*, 156(3), 549.

92 US Court of Appeal for the 11th circuit, *Cambridge University Press et al v. Carl V. Patton, e.a.*, 17 Oct. 2014, p. 57. *Perfect 10, Inc v Amazon.com, Inc*, 508 F3d 1146, 1163 (9th Cir 2007), quoting *USC, Campbell v. Acuff-Rose*, 510 US at 577 (“We must be flexible in applying a fair use analysis; it ‘is not to be simplified with bright-line rules, for the statute, like the doctrine it recognizes, calls for case-by-case analysis.’”);

93 Cf. art. 17(9), para 2.

94 Such as takedown requests under art. 17(4) c of the directive.

95 Cf. Lester, T., & Pachamano, D. (2017). “The Dilemma

revision of YouTube Content ID rules (precluding monetization claims by rightsholders for very short musical excerpts)⁹⁶ which are seemingly intended to (partially) protect a range of uses that would be covered by the citation exception⁹⁷, the incidental inclusion exception⁹⁸ or the accessory reproduction theory in French case law⁹⁹.

- 56 Therefore, since some rulification of exceptions and limitations is apparently already taking place¹⁰⁰, it seems that the choice is between unilateral and opaque (or implicit) rules set up by platforms, or publicly enacted or negotiated bright-line rules, as happened with the memorandum of agreement on the interpretation of French pedagogical exception¹⁰¹. It is likely that a unilateral rulification of exceptions and limitations by OCSSPs will be much more timid and defensive than the result of publicly negotiated agreement (which is already likely to be rather cautious), due to the strong legal liability incurred by platforms for copyright infringement under art. 17¹⁰².

of False Positives: Making Content ID Algorithms More Conducive to Fostering Innovative Fair Use in Media Creation”, *UCLA Ent. L. Rev.*, 24, 51.

- 96 Cf. YouTube Support, “Mise à jour de nos règles concernant les revendications Content ID manuelles” (20 August 2019), available at: <<https://perma.cc/4RLM-J2HE>>.
- 97 Directive 2001/29, Art. 5(3) d.
- 98 Ibidem, Art. 5(3) i.
- 99 On this jurisprudential theory which partially overlaps the EU incidental inclusion exception, see J. Cabay & M. Lambrecht, “Remix prohibited – How rigid EU copyright laws inhibit creativity” (2015) *JIPLaP*, 10(5), p. 375-376.
- 100 See also the presentation by Facebook representative : “we allow the rightsholder to determine the matching threshold, however, as is the case with all systems like these, we do require a certain amount of content in order to be able to make correct and accurate matches”; *Presentation by Facebook’s representative* Fourth meeting of the Stakeholder Dialogue on Article 17 of the Directive on Copyright in the Digital Single Market, 16 December 2019, at 10:34:10, available at: <<https://webcast.ec.europa.eu/copyright-stakeholder-dialogues-16-12>>.
- 101 Protocole d’accord du 22-7-2016 sur l’utilisation et la reproduction des livres, des œuvres musicales éditées, des publications périodiques et des œuvres des arts visuels à des fins d’illustration des activités d’enseignement et de recherche (29 September 2016) *Bulletin officiel de l’éducation nationale*, n°35.
- 102 Cf. M. Senftleben, “Bermuda Triangle – Licensing, Filtering and Privileging User-Generated Content Under the New

- 57 These bright lines for assessing uses presumably covered by an exception should be minimal, uncontroversial ones. The point is not to encompass all uses covered by exceptions and limitations, but the clearest, most unambiguous cases. Ideally, they should be the result of a negotiation between the various affected stakeholders at the European level, such as representatives of right holders, users, OCSSPs, and public authorities. That this multi-stakeholder negotiation has not been more explicitly called for in the text of the DSM directive is a sign of how little thought went as to how to ensure the effective protection of exceptions and limitations during the legislative process. However, if we consider that such rulification of bright lines for exceptions and limitations is indispensable for their being preserved by algorithmic preventive measures, as mandated by art. 17(7) and 17(9) para 3, it should be taken as falling under the mandate of the stakeholder dialogue provided by art. 17(10), intended to “discuss best practices for cooperation between online content-sharing service providers and rightholders”, especially considering the precision that “special account shall be taken, among other things, of the need to balance fundamental rights and of the use of exceptions and limitations”¹⁰³.

2. The probabilistic method: training machine learning algorithms for exceptions and limitations

- 58 Another method for ensuring a protection by default of exceptions and limitations in algorithmic copyright enforcement by OCSSPs would be to train machine learning algorithms to assess the existing conditions for exceptions and limitations.
- 59 One of the prominent areas in which the probabilistic method is currently applied in algorithmic law enforcement is the search for similarities in the context of copyright law. And, at first glance, the two fields seem like a good match. One of the primary things that a machine learning algorithm does is indeed to look for similarities or dissimilarities in a

Directive on Copyright in the Digital Single Market”, op. cit. p. 9.

- 103 In the absence of such discussion at the European level, member states should determine, in the context of their national transposition of the directive, the bright lines that should be respected in the design of algorithmic systems used for copyright enforcement. This obviously creates an issue of unharmonized interpretation of exceptions and limitations, but is probably preferable to entirely deferring such harmonization to multinational companies.

dataset, in order to generate an inference model to predict or recognize the presence of certain features in unknown pieces of content.

- 60 Therefore, in theory, given sufficiently large, curated, and unambiguous datasets, applying these algorithms to predict the correct application of some legal standards should be possible.
- 61 In her article, Niva Elkin-Koren suggests using existing American fair use decisions (supposedly along with the underlying facts of the decided fair use cases) as a dataset and supervising the training of algorithms based on parameters and clusters identified by scholars through empirical case law analysis¹⁰⁴.
- 62 One possible theoretical difficulty with this approach is that to succeed, it must rely on a somewhat robust commitment to legal rationalism, i.e., the presupposition that the judicial reasoning relies on rational arguments, and that the law is not ultimately indeterminate¹⁰⁵, as legal realists and critical legal scholars have argued¹⁰⁶.
- 63 However, even setting aside the legal theory debates, implementing such an approach requires being able to rely on a sufficiently rich dataset on the application of exceptions and limitations. However, since European copyright law is not fully harmonized, the available case law is still significantly heterogeneous¹⁰⁷, as national court decisions are still highly determined by national legal systems. Consequently, empirical studies of European IP case law are also still relatively scarce¹⁰⁸.

104 N. Elkin-Koren, *Fair Use by Design* (2017), p. 1097. For such studies, cf. notably B. Beebe, “An Empirical Study of U.S. Copyright Fair Use Opinions, 1978–2005,” (2008) 156 U. PA. L. REV. 549; B. Beebe, “An Empirical Study of the Multifactor Tests for Trademark Infringement” (2006) 95 California Law Review 1581; M. Sag, “Predicting Fair Use” (2012) 73(1) Ohio State Law Journal, p. 47.

105 For a defence of such position, see E. J. Weinrib, Ernest J. “Legal formalism: On the immanent rationality of law” (1987) *Yale LJ* 97, p. 949.

106 See for example B. Leiter (1995) “Legal indeterminacy” *Legal Theory*, 1(4), 481-492; B. Leiter “Legal realism and legal positivism reconsidered.” *Ethics* 111.2 (2001) p. 278-301; D. Kennedy, *A Critique of Adjudication [fin de siècle]*. Harvard University Press, 2009.

107 As the CJEU made clear in the case of some exceptions and limitations: cf. CJEU, *Spiegel Online*, para 39; CJEU, *Funke Medien*, para 54.

108 M. Favale, M. Kretschmer, P. Torremans, “Is There a EU Copyright Jurisprudence? An Empirical Analysis of the

Therefore, even if the US case law is also affected by its inconsistencies and circuit splits, it seems even more challenging to attempt to build the sort of dataset for training Machine Learning algorithms to recognize the application of exceptions and limitations in the case of European copyright law.

- 64 However, we should note that current content matching algorithms in search of similarities are probably not applying *the law* on copyright-relevant similarities, but merely a common-sense notion of a similarity, implicit in the mathematical model used by their developers. Therefore, for our purposes, it does not seem impossible to have lawyers curating datasets that rely on *one* interpretation of the law, even if it does not come straight from the judge’s mouth. In any case, such legal interpretation, made by OCSSPs or their subcontractors, should be explicit and be made public, for legal predictability and accountability purposes.
- 65 Whether such an approach will succeed in providing useful results depends on the state of the art of machine learning technologies, as well as the degree of indeterminacy and context-dependency of the legal standards at stake, as we will see in the case of the exception for parody (F.III.)
- 66 Let us now see how these methods can be applied to the algorithmic protection of the exception for quotation (F.II.), before considering the more challenging task of applying it to the parody exception (F.III.). We will then consider an even more radical step, aiming at curtailing the scope of preventive measures to literal copies of protected works (F.IV.).

II. Designing quotation-sensitive algorithms

- 67 The exception for quotation seems like a good entry point for attempting to design algorithms susceptible to detect and preserve uses covered by exceptions and limitations. Indeed, its conditions have been clarified in a fair number of CJEU cases¹⁰⁹ and mostly feature rules (rather than standards) that should be technically easy to assess. The only difficulty for such a transposition into algorithmic regulation is to be able to objectify these rules in a more specific

Workings of the European Court of Justice”, *Modern Law Review* 79(1): 31-75 (January 2016).

109 CJEU, C-145/10, *EvaMaria Painer v. Standard VerlagsGmbH and others* (1st December 2011); CJEU, C-516/17, *Spiegel Online v. Beck* (29 July 2019); CJEU, C-469/17, *Funke Medien v. Germany*, (29 July 2019); CJEU, C-476/17, *Pelham et Haas v. Hütter et Schneider-Esleben* (29 July 2019).

and measurable way. This requires agreeing on some minimal, uncontroversial “bright-line rules” for uses presumably covered by the exception for quotation.

- 68 In a recent trio of court decisions handed in the same day¹¹⁰, the CJEU has significantly clarified the conditions applying to the exceptions for quotation. Defining the word “quotation” according to its usual meaning, the Court stated: “the essential characteristics of a quotation are the use, by a user other than the copyright holder, of a work or, more generally, of an extract from a work for the purposes of illustrating an assertion, of defending an opinion or of allowing an intellectual comparison between that work and the assertions of that user”¹¹¹. Let us discuss the conditions of the exception one by one¹¹².
- 69 As we mentioned, such bright-line rules should ideally be the result of a multi-stakeholder negotiation at the EU level. However, by way of example, we could try to imagine what such compromises could look like. We will outline a few tentative suggestions, drawing from an analysis of the CJEU case law on the exceptions for quotation and parody. For each case, we will begin by reviewing the legal conditions of the exception, and then propose a simplified bright-line rule that could be used by automated systems to approximate the conditions of the exception.

a) Purpose of the use

- 70 An essential condition of the quotation exception is that it must be made for certain purposes. The text of the InfoSoc directive provides a non-exhaustive list of purposes (“such as criticism or review”)¹¹³. In the *Spiegel Online* case, the CJEU mentioned other admissible purposes such as “illustrating an assertion, of defending an opinion or of allowing an intellectual comparison between that work and the assertions of that user”¹¹⁴.

110 CJEU, *Spiegel Online v. Beck*; CJEU, *Funke Medien v. Germany*; CJEU, *Pelham et Haas v. Hütter et Schneider-Esleben*.

111 CJEU, *Spiegel Online*, para 71.

112 We will notably rely on our comprehensive study in J. Cabay & M. Lambrecht, “Remix prohibited – How rigid EU copyright laws inhibit creativity” (2015) *JIPLaP*, 10(5).

113 InfoSoc directive, art. 5(2) d.

114 CJEU, *Spiegel Online*, para 80. Moreover, in *Funke Medien* (para 43), the Court explicitly stated that article 5(3)(d) of the InfoSoc directive sets out “merely an illustrative list of such cases”. However, immediately after, the court sets out a number of limits of Member States’ discretion in that regard. It might be that further harmonization is to be

- 71 This purpose could possibly be analysed by means of text analysis (and in case of video or audio content, combined with speech recognition technologies already in place on some platforms¹¹⁵), for example by checking whether the name of the quoted work is mentioned in the citing work.

- 72 However, this purpose could be much more easily verified by OCSSPs by having their users flagging excerpts of protected works during the upload process, and clicking to confirm that such uses are made “for purposes authorized by the exception for quotation, such as criticism, review, illustrating an assertion, defending an opinion, etc”¹¹⁶. Such a proactive declaration from the citing user, although not technically required by the quotation exception, would weigh in favour of its good faith¹¹⁷, and could constitute good evidence in favour of a presumption of coverage by the exception for quotation.

b) Indication of the source

- 73 Art. 5(2) d. of the InfoSoc directive provides as a condition for the benefit exception of quotation that “unless this turns out to be impossible, the source, including the author’s name, is indicated”.

- 74 Again, although this condition is not always required, an indication of the source by the uploading user should weigh in favour of its being presumably covered by the exception for quotation. Moreover, if platforms provide easy means for the users to indicate such information, they could not only make their assessment easier but make it a *de facto* compulsory condition, as it would be difficult to argue that such an indication of the source is impossible.

expected in that regard.

115 Liao, H., McDermott, E., & Senior, A. “Large scale deep neural network acoustic modeling with semi-supervised training data for YouTube video transcription” (2013) IEEE Workshop on Automatic Speech Recognition and Understanding.

116 On this idea of users voluntary flagging uses as covered by exceptions or limitations, see G. Spindler, “The Liability system of Art. 17 DSMD and national implementation – contravening prohibition of general monitoring duties?” (2019) *JIPITEC* 10(3), at 134.

117 Of course, false declarations could be subject to sanctions in case of repeated abuses.

c) Accessory character

- 75 In its *Spiegel* case, the CJEU clarified one of the conditions of the exception for quotation, which is its accessory character to the user's own reflections. This can be decomposed in two sub-conditions: first, that the user must "establish a direct and close link between the quoted work and his own reflections, thereby allowing for an intellectual comparison to be made with the work of another"¹¹⁸, and second that "the use of the quoted work must be secondary in relation to the assertions of that user"¹¹⁹.
- 76 The first condition could be interpreted as requiring that the quoted work be somewhat loosely integrated into, or linked to (without necessarily being "inextricably integrated"¹²⁰) a quoting work or object, so as to allow an intellectual comparison"¹²¹ (or "entering into dialogue"¹²²) with that work. Such quoting object does not necessarily need to be protected by copyright¹²³, but it needs to exist.
- 77 How to implement this in an algorithmic decision system? It is relatively easy for digital fingerprinting systems to identify whether the quoted work is itself a part of a larger work, by analyzing the amount of content that does not match the quoted work: is a video clip followed, preceded, or supplemented with a voiceover commentary? Is a quoted image part of a document with human-readable text? In the affirmative, the use should be interpreted as presumably satisfying the condition of a "direct and close link" for the purpose of making an "intellectual comparison" between the quoted work and the quoting object¹²⁴.

118 CJEU, *Spiegel Online*, para 78.

119 CJEU, *Spiegel Online*, para 79.

120 CJEU, *Spiegel Online*, para 80.

121 CJEU, *Spiegel Online*, para 78.

122 CJEU, *Pelham*, para 71.

123 CJEU, *Painer*, para 136.

124 However, as the Court noted in the *Spiegel Online* case, it is not required for the application of the exception of quotation "that the quoted work be inextricably integrated, by way of insertions or reproductions in footnotes for example, into the subject matter citing it" (CJEU, *Spiegel Online*, para 80). How can we ensure, in that case, that the user who uploaded the quoted work is indeed using it as a quotation in another work? A fairly easy way to verify this would be to require the user to provide a link to that citing work or object (e.g. in the description or metadata of the content posted on the OCSSP), which could then be analyzed to look for the existence of a backlink from the citing work. This is entirely

- 78 The second condition, that the quotation "must be secondary in relation to the assertions of that user", could be emulated by some threshold of the relative length of the quotation compared to the length of the quoting work or object. An example of such a threshold could be the following:

The amount of use of a given quoted work must not be larger than 15% of the quoting work or object

- 79 Such a 15% threshold would give sufficient leeway for allowing meaningful quotations in relatively short works while supporting a fairly good presumption that the quotation is accessory to the quoting work or object.

d) Length of the quotation

- 80 Finally, let us turn to the most difficult issue, the length of the quotation. According to art. 5(2) d. of the InfoSoc directive, the use of the quoted work must be limited "to the extent required by the specific purpose". As the Court recalls in *Spiegel Online*, the quotation "cannot (...) under Article 5(5) of Directive 2001/29 [the "three step test"], be so extensive as to conflict with a normal exploitation of the work or another subject matter or prejudices unreasonably the legitimate interests of the rightsholder"¹²⁵. However, this general requirement doesn't preclude a quotation to be comprised of the entirety of the cited work. Indeed, according to the Court, it stems from a literal interpretation ("usual meaning") that a quotation is "the use, by a user other than the copyright holder, of a work or, more generally, of an extract from a work"¹²⁶. So, one could cite an entire work, as long as such full-length use is "required by the specific purpose". In *Spiegel Online*, the court left it to the referring court "to ascertain whether the publication of the original versions of the manuscript and of the article published in the book at issue, in full (...), was necessary to achieve the informatory purpose."¹²⁷

- 81 However, the subtleties of such determination are clearly way beyond what any algorithm could achieve. Therefore, for the purposes of determining uses presumably covered by the exceptions for quotation, the minimal bright line should clearly be

consistent with the CJEU's decision, which notes that "a quotation may thus be made by including a hyperlink to the quoted work" (*Ibidem*).

125 *Spiegel Online*, para 79.

126 *Spiegel Online*, para 78.

127 *Spiegel Online*, para 69.

less than the full work. However, beyond these basic principles, there are no objective and indisputable criteria for assessing the admissible length of excerpts which can be presumed to be covered by the exception for quotation.

- 82** In the US debate, many bright-line rules have turned around what is often called “the ten percent rule”, as an absolute cap of the amount of the use of the work. For example, Parchomovsky & Goldman¹²⁸ suggests the following rule for literary works: “for any literary work consisting of at least one hundred words, the lesser of fifteen percent or three hundred words may be copied without the permission of the copyright holder”¹²⁹. For other types of works, the authors’ proposals range from “the lesser of ten percent or ten seconds” for sound recordings and musical compositions, to “the lesser of 10 percent or thirty seconds” for audiovisual works¹³⁰. However, these suggestions are made in the context of a fair use exception which includes among its criteria “The amount and substantiality of the portion used in relation to the work as a whole”.
- 83** In France, an agreement has been reached between representative of rightsholders and of the educative sector¹³¹ for the application of the exception for education¹³². Interestingly, this agreement also allows teachers to use excerpts of works not normally covered by the exception for education, such as pedagogical works and musical works, as long as such excerpts are not longer than 10 % of the original work¹³³.
- 84** Let us imagine that, when trying to agree on a minimal bright line for the purpose of our proposed presumption of coverage by the exception for quotation, stakeholders end up with an even more modest agreement, ten times lower than in the case of the French exception for education: 1% of the quoted work. Such rule would have to provide for

minimum and maximum thresholds, since 1% can be excessively short (in case of very short works such as 17 syllables haikus¹³⁴) or very long (in case of a 180 minutes feature film). Therefore, as an example of a possible compromise, we could consider the following proposal for literary works:

*The citing work must not use continuous excerpts that are longer than 750 characters, or 1% of the length of the work for a maximum of 3000 characters*¹³⁵

- 85** Or for audiovisual works or sound recordings¹³⁶:

*The citing work must not use continuous excerpts that are longer than 20 seconds, or 1% of the length of the work for a maximum of 45 seconds*¹³⁷

- 86** The situation is more subtle in the case of graphical works¹³⁸. But in the context of video-sharing

134 In case of such very short works, it seems that quotation in full must be allowed, as such practice is rather common, and doesn’t run counter the usual meaning of the word “quotation”.

135 750 characters is equivalent to a quarter of an A4 page, while 3000 characters is equivalent to a full A4 page..

136 To address issues of sampling, the stakeholders might want to limit the maximal length for quotation of musical works more drastically. However, not only would our suggested 15% relative length limit not be very attractive for sampling purposes, but more fundamentally it would be a mistake to consider that preventive measures taken under art. 17(4) b) and c) are an appropriate way to detect litigious sampling cases, if only because they are often highly contentious even for human judges. In any case, the sampling of an excerpt of a musical track would not fit with the authorized purposes of the exception for quotation. Moreover, the takedown of such unauthorized sampling would probably be better undertaken through a manual takedown notice, as heavily transformed and rearranged samples will not be easily detected by algorithmic systems (nor should they be, in our approach; Cf. *infra*, 5.4).

137 20 seconds is 1% of a 30 minutes short movie, and 45% is slightly less than 1% of a 50 minutes TV episode.

138 Indeed, a distinction must be made between works whose enjoyment must unfold in time, such as audiovisual works or sound recordings, and works which can instantly be enjoyed in full, such as graphical works work. For these works, it is generally necessary to be able to use the work in full for any meaningful citation. Therefore, rather than constraining the portion of the work that can be cited, some have suggested imposing a maximal resolution for the reused image, such as in the French agreement for use of works for illustration of teaching and research where a maximal resolution of 400x400 pixel is imposed

128 Parchomovsky, G., & Goldman, K. A. “Fair use harbors” (2007) *Virginia Law Review*, 1511-1518.

129 *Ibidem*, p. 1511.

130 *Ibidem*, p. 1512-1514.

131 Protocole d’accord du 22-7-2016 sur l’utilisation et la reproduction des livres, des œuvres musicales éditées, des publications périodiques et des œuvres des arts visuels à des fins d’illustration des activités d’enseignement et de recherche (29 septembre 2016) *Bulletin officiel de l’éducation nationale*, n°35.

132 Article L 122-5-3° of the French Code de Propriété Intellectuelle.

133 Protocole d’accord du 22-7-2016, *op. cit.*, 4.2.1.

platforms, they can be considered as a still frame video clip, for which the same thresholds as audiovisual works should apply.

- 87 Finally, for the purposes of this presumption of coverage by the exception for quotation, and to avoid making it excessively rigid, we suggest that no maximum limit be imposed on the cumulative total amount of the work cited. The requirement that the quotation must be made only by excerpts no longer than 1 percent of the work, combined with the aforementioned condition that the quotation must be accessory to the citing work, appears sufficient to presume that the quotations are necessary for the pursued purpose. These conditions are also enough to ensure that the secondary work will not be a market substitute for the first work (and so will not conflict with a normal exploitation of the work).

III. Designing parody-sensitive algorithms

- 88 The issue of designing algorithms that are able to recognize and protect parodies is clearly more challenging.

Legally speaking, the CJEU has considerably clarified (but not necessarily simplified) its necessary conditions in its landmark *Deckmyn* case¹³⁹, stating that the concept of parody should be regarded as an autonomous concept of EU law¹⁴⁰. However, the appreciation of a parody lies on a very elusive legal standard for machines to assess: humor.

- 89 Here, as we will see, there are only two possibilities: either it is feasible, under the current state of technological development, for companies to reliably comply with the twofold obligation to prevent unauthorized uses while also not “prevent[ing] the availability” of uses covered by the exception for parody; or, if it is not feasible, OCSSPs’ best efforts obligation should not extend to achieving the impossible, and preventive measures should be curtailed in order to avoid applying to parodies.

Let us discuss whether designing parody-sensitive algorithms is achievable, by reviewing the different

for graphical works (Protocole d’accord du 22-7-2016, op. cit., section 4.2.3). However, setting such an absolute size in pixels seems overly rigid and clearly not future-proof, considering the continuing growth in image (and screen) resolution, and the availability of deep learning based upscaling technologies.

139 CJEU, C-201/13, *Deckmyn*, op. cit.

140 CJEU, *Deckmyn*, para 15.

legal conditions for the appreciation of a parody under the current state of CJEU case law.

a) Evoking an existing work while being noticeably different

- 90 In the *Deckmyn* case, the CJEU upset many of the conditions required in some national case law on parody, such as the condition required in jurisdictions such as France or Belgium, that the parody should be original¹⁴¹. Explicitly dismissing this condition, the court replaces it by a much weaker condition, that the parody should “evoke an existing work while being noticeably different from it”¹⁴².
- 91 The first part of the condition, that the parody “evokes an existing work”, is rather straightforward. If a parody did not evoke an existing work, but for example evoked an artistic genre in general (which would be closer to a “pastiche”), it would not borrow any original expression from a particular work, and therefore would not need to rely on an exception.
- 92 The second part of the condition turns on the fact that the parody should be “noticeably different” from the original work. So, there should be more than merely technical, indiscernible alterations. Here we should distinguish between two possibilities: either the original expression which was borrowed has itself been transformed, so that the borrowed expression is noticeably different (let us call it a “transformative parody”), or it has been integrated without transformation in a larger work, and it is this larger work that is noticeably different from the original work (“quotative parody”). Some courts have admitted such untransformed use of a work for parodic purposes, as in the case of communication of a whole poem during a comedy radio program¹⁴³, or a photograph reproduced in a parodic collage¹⁴⁴.

141 Cf. J. Cabay, M. Lambrecht (2015) op. cit., p. 370; This shift eases up the assessment of the exception for parody since this means that it is not needed to assess whether the secondary work complies with the originality threshold, a concept whose contours are notoriously vague.

142 CJEU, *Deckmyn*, para 33.

143 Court of Appeal of Brussels, (29 July 2010) A&M 547. Cf. J. Cabay, M. Lambrecht (2015), op. cit., p. 373.

144 Court of Appeal of Ghent, (13 May 2013) A&M 352. Cf. J. Cabay, M. Lambrecht (2015), op. cit., p. 373.

b) The secondary work must be an “expression of humour or mockery”

- 93 The second criterion from the CJEU case law is the existence of an “expression of humour or mockery”¹⁴⁵. Clearly, this second criterion poses a much greater difficulty for algorithmic assessment. There is no apparent way to simplify this criterion into a bright-line rule since it is essentially a standard whose appreciation cannot easily be formalized. Of course, humor is a complex cognitive, emotional and social phenomenon, which defies most theoretical attempts at defining and reducing it. Therefore, it seems that if algorithms must assess if a use constitutes “an expression of humour or mockery”¹⁴⁶, it must be through a general assessment of such standard. Under the current state of the art, could machine learning algorithms be up to the task?
- 94 For example, could a machine learning algorithm be trained to detect uses for the purpose of parody, which under CJEU case law requires the existence of “an expression of humour or mockery”? Most studies about algorithms and humour have focused on training algorithms at identifying patterns in a corpus of jokes or reproducing these patterns in computer-generated humour¹⁴⁷.
- 95 A number of studies have focused on sarcasm detection, an area of particular interest for companies willing to achieve a better knowledge of how consumer perceive their products through the analysis of user comments or microblogs¹⁴⁸. While, as Mukherjee & Bala note, “[d]etecting sarcasm in

online text is still in its infancy”¹⁴⁹, promising results have been achieved¹⁵⁰, notably by taking into account punctuation (e.g. exclamation points or quotes)¹⁵¹, pragmatic features (e.g. emoticons)¹⁵², or external features such as linguistic styles of authors¹⁵³. A significant challenge for algorithmic recognition of sarcasm is the absence of context: in a study by Davidov, Tsur & Rappoport¹⁵⁴, the authors reach a much better F1 score¹⁵⁵ for their dataset of Amazon comments, where the context is known (the product being reviewed), than in an uncontextualized Twitter dataset¹⁵⁶. And although certain features of the social context of a message can easily be extracted (i.e. where the message takes place, what does it respond to, etc.), the broader cultural context is infinitely more difficult for algorithms to integrate.

- 96 Other studies on humour-recognition have focused on particular types of humoristic patterns¹⁵⁷, such as wordplay recognition in knock-knock jokes, or identification of features such as alliteration,

145 CJEU, *Deckmyn*, para 20.

146 CJEU, *Deckmyn*, para 20.

147 Cf. D. Bacciu, V. Gervasi & G. Prencipe (2016), *LOL: An Investigation into Cybernetic Humor, or: Can Machines Laugh?*, in E. D. Demaine and F. Grandoni, *8th International Conference on Fun with Algorithms*, Schloss Dagstuhl--Leibniz-Zentrum fuer Informatik; L. Gultchin, “Just for Laughs: Utilizing Machine Learning to Rate and Generate Humorous Analogies” (2017) Master thesis, Harvard University; BINSTED, K., and G. RITCHIE. 1997. Computational rules for punning riddles. *Humor*, 10(1):25–76.; STOCK, O., and C. STRAPPARAVA. 2003. Getting serious about the development of computational humour. In *Proceedings of the 8th International Joint Conference on Artificial Intelligence (IJCAI-03)*, p. 59, Acapulco, Mexico.

148 Cf. S. Mukherjee & P. K. Bala, “Sarcasm detection in microblogs using Naïve Bayes and fuzzy clustering”, *Technology in Society* Volume 48, February 2017, p. 19; D. Davidov, O. Tsur, & A. Rappoport, “Semi-Supervised Recognition of Sarcastic Sentences in Twitter and Amazon” (2010) in *Proceedings of the fourteenth conference on computational natural language learning*.

149 S. Mukherjee & P. K. Bala, “Sarcasm detection in microblogs using Naïve Bayes and fuzzy clustering”, *Technology in Society* Volume 48, February 2017, p. 19.

150 See references in Thakur, S., Singh, S., & Singh, M. (2019). *Detecting Sarcasm in Text*. *Intelligent Systems Design and Applications*, p. 997.

151 Cf. D. Davidov, O. Tsur, & A. Rappoport, “Semi-Supervised Recognition of Sarcastic Sentences in Twitter and Amazon” (2010) In *Proceedings of the fourteenth conference on computational natural language learning*, p. 107.

152 R. González-Ibáñez, S. Muresan, N. Wacholder, Identifying sarcasm in Twitter: a closer look. In: *Proceedings of the 49th Annual Meeting of the Association for Computational Linguistics: Human Language Technologies: Short Papers-Volume 2*, p. 581.

153 S. Mukherjee & P. K. Bala, “Sarcasm detection in microblogs using Naïve Bayes and fuzzy clustering”, *Technology in Society* Volume 48, February 2017, p. 26.

154 D. Davidov, O. Tsur, & A. Rappoport “Semi-Supervised Recognition of Sarcastic Sentences in Twitter and Amazon” (2010) op. cit.

155 The F1 score is the harmonic mean of precision and recall, thus taking into account both the number of false positives and false negatives.

156 The F1 scores reported in the article are respectively 0.826 for the Amazon comments dataset and 0.545 for the uncontextualized Twitter dataset.

157 J. Talor, & L. Mazlack. “Computationally recognizing wordplay in jokes” (2004) In *Proceedings of CogSci2004*, Chicago, p. 1315.

antonymy or adult slang in one-liners using automatic text classification¹⁵⁸.

- 97 Authors often make the point that humour recognition is a task that is often hard even for humans, and thus also very challenging for machine learning algorithms¹⁵⁹, notably because (human-made) training datasets can often be biased and noisy¹⁶⁰.
- 98 Moreover, for video-sharing OCSSPs, such algorithmic humour recognition would have to be combined with speech recognition algorithms, which would negatively affect their reliability.
- 99 Therefore, it appears highly premature to attempt to apply this research to design algorithmic decision systems aimed at parody recognition. Parody is a rich and diverse genre that dates back to Antiquity. In his theory of intertextuality, Genette distinguishes between a parody, a travesty, a pastiche, a caricature, depending on whether the hypertext is “transforming” or “imitating”, and whether the mood is “playful” or “satirical”¹⁶¹. Korkut, who distinguishes between parodies of texts and personal styles, genre parody, discourse parody, notes that if the presence of an “element of humour” is an essential characteristic of the concept of parody, it “has the potential to comprise all shades of the comic, from the most subtle and least discernible to the most explicit”¹⁶². As the advocate general noted in the Deckmyn case, before arguing for a broad discretion of Member States in that regard: “extreme seriousness (...) may underlie a humorous expression”¹⁶³.

100 Bacciu, Gervasi and Prencipe consider that, in general, distinguishing a humorous from a serious statement is currently “way beyond the capabilities” of machines¹⁶⁴. As we have seen, in the current state of research, machine learning algorithms are only capable of recognizing specific humoristic patterns with an acceptable level of accuracy. If it is at all possible, it will probably take many years of research before algorithmic recognition systems are capable of reliably recognizing the diversity of humoristic forms present in parodies.

101 To recall, this was confirmed even by the representatives of a leading content cognition software companies during the stakeholder dialogue, Audible Magic: “Copyright exceptions require a high degree of intellectual judgment and an understanding and appreciation of context. We do not represent that any technology can solve this problem in an automated fashion. Ultimately these types of determinations must be handled by human judgment (...)”¹⁶⁵.

IV. Curtailing preventive measures to identical or equivalent protected objects

102 Since the current state of the art of machine learning algorithm does not allow to reliably identify parodies, preventive measures resulting from art. 17(4) b. and c. are highly likely to lead to systematic interference with the freedom of speech of creators of transformative works covered by the parody exception. To avoid such systematic interference, which would violate the twofold obligation to both “prevent the availability” of unauthorized works while also not preventing “the availability of works (...) which do not infringe copyright”, preventive measures resulting from art. 17(4) b. and c. should be limited in application to works or protected objects that are *identical or equivalent* to those for which the OCSSP have received the “relevant and necessary information” from the rightsholders¹⁶⁶.

158 R. Mihalcea, C. Strapparava, “Learning to Laugh (automatically): Computational Models for Humor Recognition” (2006) *Computational Intelligence* 22(2), p. 126; D. Yang & al., *Humor Recognition and Humor Anchor Extraction*, In *Proceedings of the 2015 Conference on Empirical Methods in Natural Language Processing*, p. 2367.

159 D. Bacciu, V. Gervasi & G. Prencipe (2016), *LOL: An Investigation into Cybernetic Humor, or: Can Machines Laugh?*, in E. D. Demaine and F. Grandoni, *8th International Conference on Fun with Algorithms*, Schloss Dagstuhl--Leibniz-Zentrum fuer Informatik.

160 D. Davidov, O. Tsur, & A. Rappoport (2010) op. cit. p. 111.

161 G. Genette, *Palimpsests: Literature in the Second Degree* (1997) Lincoln: University of Nebraska Press.

162 N. Korkut, *Kinds of Parody. From the medieval to the postmodern*. (2005) Ankara, Middle East Technical University, p. 14.

163 CJEU, Opinion of Advocate General Cruz Villalón, Case C-201/13, *Deckmyn v Vandersteen*.

164 D. Bacciu, V. Gervasi & G. Prencipe, *LOL: An Investigation into Cybernetic Humor, or: Can Machines Laugh?* (2016) in E. D. Demaine and F. Grandoni, *8th International Conference on Fun with Algorithms*, Schloss Dagstuhl, Leibniz-Zentrum fuer Informatik.

165 Fourth meeting of the Stakeholder Dialogue on Article 17 of the Directive on Copyright in the Digital Single Market, *Presentation by Vance Ikezoye (Audible Magic)* (16 December 2019), available at: <<https://webcast.ec.europa.eu/copyright-stakeholder-dialogues-16-12>>.

166 In the same spirit, J. P. Quintais, G. Frosio, S. Van Gompel,

Here, an “equivalent” work must be understood as a work presenting such insignificant alterations that the target audience¹⁶⁷ would not distinguish it as a different work (e.g. mere technical alterations used to attempt to circumvent content matching algorithms). Conversely, any transformative work that is not identical or equivalent to another work should not be affected by preventive measures under 17(4)¹⁶⁸.

103 A similar criterion was proposed in an open letter signed by dozens of academics¹⁶⁹, which judiciously notes that “[t]he concept of equivalent information should be interpreted strictly”. This “identical or equivalent” criterion is also at the center of a recent CJEU decision (*Glawischnig-Piesczek v Facebook*) on

judicial “staydown obligations”¹⁷⁰ for platforms in the context of defamatory statements¹⁷¹. The court notes that if the injunction was limited to “identical” information, it “could easily be circumvented by the storing of messages which are scarcely different from those which were previously declared to be illegal”¹⁷². The definition used by the Court cannot be directly transposed here¹⁷³, but its reasoning is worth emphasizing, as it states that the differences “must not, in any event, be such as to require the host provider concerned to carry out an independent assessment of that content”¹⁷⁴. Similarly, our definition of an “equivalent” work should not require a complex legal assessment, but should be easy enough to determine for algorithmic systems.

104 This interpretation, that preventive measures under article 17(4) b. and c. should be limited to identical or equivalent works or objects, also follows from the most straightforward, literal reading of art. 17(4), which doesn’t impose OCSSPs to ensure the unavailability or prevent future uploads of “specific” or “notified” “works or other subject matter”, and not all infringing content in general. So, the OCSSPs’ filtering obligation would only apply to identical (or equivalent) works or protected objects as the ones communicated to them by rightsholders, and not adapted works. There is some logic to limiting preventive measures to such cases of literal copying since such exceptional measures must be intended to prevent imminent risk of harm (just as proceedings for interim relief in civil law jurisdictions are limited to assessing mere “appearance of rights”¹⁷⁵) and

e.a. (2019), “Safeguarding User Freedoms in Implementing Article 17 of the Copyright in the Digital Single Market Directive: Recommendations from European Academics”, *JIPITEC* 10 (3) (discussed below); see also R. Schwartmann and C. H. Hentsch, “Stufenkonzept zur Umsetzung von Art. 17 der DSM-Richtlinie” (2020, 17 March), <<https://perma.cc/T6RB-ADX5>>.

167 Here we take inspiration from Cabay’s discussion of the relevant similarities for the appreciation of a copyright infringement, narrowing it by requiring that there are merely “insignificant alterations”, and that the two works be indistinguishable by the target audience. See J. Cabay *L’objet de la protection du droit d’auteur: Contribution à l’étude de la liberté de création* (2016), PhD thesis, Université Libre de Bruxelles.

168 Unless it also includes some degree of literal copying which does not meet the bright-line rules for the presumption of coverage by the exception for quotation (see *supra*, F.II).

169 Cf. J. P. Quintais, G. Frosio, S. Van Gompel, e.a. (2019), “Safeguarding User Freedoms in Implementing Article 17 of the Copyright in the Digital Single Market Directive: Recommendations from European Academics”, *JIPITEC* 10 (3). The co-signatories propose limiting the application of preventive measures under art. 17(4) b. and c. to cases of “prima facie copyright infringement”, a notion that they define as “protected material that is *identical* or *equivalent* to the ‘relevant and necessary information’ previously provided by the rightholders to OCSSPs”. While we are among the co-signatories of this important and timely text, we submit that a Free speech by design approach further alleviates the risks posed by the directive for the protection of exceptions and limitations. In particular, a salient difference between the two proposals is that the proposal exposed here avoids altogether flagging and blocking content that are not identical or equivalent to works for which OCSSP have been informed, , whereas Quintais et al. would only delay their blocking, in order to allow for a reasonable period of time for the user to justify its use.

170 Staydown obligations are obligations for intermediaries to “not only to take down the notified content, but also to prevent its further reappearance”. Cf. M. Husovec, “The Promises of Algorithmic Copyright Enforcement: Takedown or Staydown: Which Is Superior: And Why” (2018) *Colum. JL & Arts*, 42, p. 61.

171 CJEU, C-18/18, *Eva Glawischnig-Piesczek v Facebook Ireland Limited* (3 October 2019).

172 CJEU, *Glawischnig-Piesczek v. Facebook*, para 41.

173 Indeed, the case concerned a message against a specific person subject to a court injunction: “it should be made clear that the illegality of the content of information does not in itself stem from the use of certain terms combined in a certain way, but from the fact that the message conveyed by that content is held to be illegal, when, as in the present case, it concerns defamatory statements made against a specific person” CJEU, *Glawischnig-Piesczek v. Facebook*, para 40.

174 CJEU, *Glawischnig-Piesczek v. Facebook*, para 45.

175 Cf. J. Englebert, « Le référé judiciaire: principes et questions de procédure », in *Le référé judiciaire*, Dir. J. Englebert et H.

should not apply generally to all, more debatable, cases of potential harms. This interpretation in no way leaves the authors or rightsholders without protection, as there remain ample means at their disposal to enforce their rights, through takedown requests or court injunctions.

105 But even if it did not follow from a literal reading of article 17, this limitation of the scope of preventive measures would nevertheless be a logical consequence of a free speech by design approach, required by a contextual reading of the article. Indeed, the best way to prevent “free speech invading events” is to minimize the risk that algorithmic systems must assess uses that are in the grey zone between “possibly infringing” and “possibly covered by an exception or limitation”. If we read the best efforts obligation under art 17(4) b. and c., as we have, as a twofold obligation to “prevent the availability of unauthorized works *while not preventing the availability of works covered by exceptions and limitations*”, then it makes sense to trade-off some efficiency in detecting infringement for protecting some effectiveness of the users’ right to quotation or parody.

106 It is also justified by the longstanding CJEU case law, where the court repeatedly held that the right to intellectual property enshrined in art. 17(2) of the Charter of Fundamental Rights is not “inviolable” and must not be “absolutely protected”¹⁷⁶, but must be protected by measures that are “effective” and “dissuasive”, but also “proportionate”¹⁷⁷, in line with a fair balance between relevant fundamental rights¹⁷⁸. This is explicitly recognized by recital 66, para 2 of the DSM directive:

*“it cannot be excluded that in some cases availability of unauthorised content can only be avoided upon notification of rightsholders. Any steps taken by service providers should be effective with regard to the objectives pursued but should not go beyond what is necessary to achieve the objective of avoiding and discontinuing the availability of unauthorised works and other subject matter”*¹⁷⁹

107 This is also clear in the statement by Germany annexed to the council vote, emphasizing its concern

Boularbah, éd. CJB, 2003, p. 5-64.

176 CJEU, *Scarlet v. SABAM*, para 43; CJEU, *Netlog v SABAM*, para 41; CJEU, C-314/12, *UPC Telekabel Wien v. Constantin Film et al.* (27 March 2014), para 61.

177 Directive 2004/48/ec on the enforcement of intellectual property rights, art. 3.

178 Cf. J. Cabay, & M. Lambrecht (2019) op. cit.

179 DSM Directive, recital 66, para 2.

for “preventing ‘upload filters’ wherever possible, ensuring freedom of expression and safeguarding user rights”¹⁸⁰.

108 Moreover, this interpretation, limiting the scope of preventive measures under art. 17(4) b. and c. to identical or equivalent works, is also supported by a proper definition of the scope of the right of communication to the public performed by OCSSPs, under the fair balance paradigm. As others argued, it seems that (despite dubious claims in the DSM directive that it merely clarifies existing law¹⁸¹) article 17(1) must be interpreted as creating a new right of communication to the public¹⁸². The scope of this new right need not be entirely distinct from the scope of article 3, and the two could have some overlap¹⁸³. But the important point is that in cases such as this, where the need to strike a fair balance between competing fundamental rights (among which the user’s right to freedom of expression and the OCSSPs’ right to conduct a business) is essential due to the nature of the measure envisaged, it is plausible that the scope of right of communication to the public provided by art. 17(1) be much narrower than the right of communication to the public provided by art. 3 of the InfoSoc directive. This is in line with the reasoning followed by the CJEU in the *GS Media* case, where the need to strike a fair balance between fundamental rights (and freedom

180 Directive on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC, Statement by Germany, 15 April 2019, 7986/19ADD 1 REV 2.

181 Cf. DSM directive, recital 64. As Husovec and Quintais point out, article 17 introduces such major changes in the law (such as the introduction of the liability mitigation mechanism of art. 17(4), “that it can hardly be said to clarify existing law”. Husovec, M., & Quintais, J. (2019). “How to license Article 17? Exploring the Implementation Options for the New EU Rules on Content-Sharing Platforms”. Working paper, available at: <<https://dx.doi.org/10.2139/ssrn.3463011>>.

182 M. Husovec, & J. P. Quintais (2019) op. cit.

183 This could be a way reconcile the *acquis* from the DSM directive with the case law of the CJEU, in case it decided, in the upcoming *YouTube* case, to extend its jurisprudence in *Ziggo* to interpret even more largely art. 3 of the InfoSoc directive as covering the activities of user generated content platforms, even when they don’t have knowledge of the presence of infringing content. Cf. CJEU, request for a preliminary ruling, C-682/18, “*LF v YouTube*”; CJEU, C-610/15, *Stichting Brein v Ziggo et al.* (14 June 2017).

of expression played a large role here) is such that it leads the Court to limit the scope of the right of communication to the public¹⁸⁴, despite its explicit reliance on a broad interpretation of such right¹⁸⁵.

109 Finally, to further reinforce this point, one could also argue, as some influential authors have¹⁸⁶, that the adaptation right has remained largely unharmonized in EU law, and that therefore, assuming that the DSM directive is grounded in the exclusive rights as defined by the InfoSoc Directive, art. 17(4) only applies to cases of reproductions or communications to the public of literal copies of works, and not to adaptations¹⁸⁷.

110 However, even if we admit that the preventive measures of art. 17(4) only apply to identical or equivalent works or objects, this does not cover all use cases potentially covered by the exception of parody. Indeed, as we have noted, not all parodies are “transformative”, in that they transform the borrowed expression. Indeed, the “noticeably different” condition in the Deckmyn case is compatible with what we have called “quotative parodies”, that borrow an (untransformed) original

184 Although the court does not describe this as a “limitation”, we would argue that, by conditioning the application of the right of communication to the public to circumstances such as the knowledge of the user and its for-profit or non-for-profit purpose, this interpretation must be considered as such.

185 Cf. J. Cabay & M. Lambrecht (2019) op. cit., p. 201-206.

186 See S. von Lewinski and M. Walter, “Information Society Directive” in Walter and von Lewinski (eds) *European Copyright Law*, Oxford University Press, 964 and 1479; P. Goldstein and B. Hugenholtz *International Copyright. Principles, Law, and Practice* (3rd edn OUP Oxford 2013), 322; L. Bently “Exploring the Flexibilities available to UK Law” (2011) *Exploring the Flexibilities Available to UK Law*. Submission to Hargreaves Review. url: <<https://webarchive.nationalarchives.gov.uk/20140603125508/http://www.ipo.gov.uk/ipreview-c4e-sub-bently.pdf>>; P. B. Hugenholtz & M. Sentleben, “Fair Use in Europe. In Search of Flexibilities” (2012), available at: <<http://dx.doi.org/10.2139/ssrn.2013239>>.

187 Although this interpretation might appear to be at odds with the broad definition of the right of reproduction under the CJEU case law (cf. CJEU, C-5/08, *Infopaq International* (16 July 2009)), this need not be a fatal objection for the argument that Member-States remain competent for the right of adaptation: see E. Rosati, “Copyright in the EU: in search of (in)flexibilities”, *JIPLaP* 9(7), 2014, p. 596-597. In any case, the fact remains that there is a difference between literal reproduction and adaptation, and under a literal interpretation of the text, the right to communication to the public under art. 17 does not cover the latter.

expression into a larger work for humorous purposes. And since algorithmic systems cannot reliably assess the presence of “an expression of humour or mockery”, such allowed borrowings are therefore very hard to distinguish from so-called identical or equivalent content.

111 A compromise solution could be that such quotative parodies be treated in the same way as uses for purposes covered by the parody exception, and they should comply with the same maximal thresholds regarding their length¹⁸⁸. This solution could prove a reasonable way to accommodate such parodies, without impeding too much on the effective detection of infringing uses.

G. Ensuring the effectiveness of Free speech by design

112 In reflecting on how to ensure effective protection of exceptions and limitations, we should strive to learn the lessons from past attempts. This includes the U.S. DMCA counter-notice system, as well as the InfoSoc art. 6(4) safeguard provision on TPMs, which arguably both failed to effectively protect uses covered by exceptions and limitations.

113 As we mentioned, one reason for such failure was that the traditional approach for safeguarding exceptions and limitations mostly rely on providing procedural remedies, to which users rarely resort. For this reason, we argued that protecting exceptions and limitations by default is a better guarantee of some level of effective protection against systematic interference by algorithmic systems.

114 However, the ineffectiveness of the traditional approach is probably related to two additional issues, which we will briefly touch upon: lack of proper incentives, and lack of accountability.

First, it is important to fix the skewed incentive structure faced by online platforms, in order for them to strike a better balance between the competing claims by rightsholders and users¹⁸⁹. Unfortunately, the directive isn’t of much help in this regard, as it merely provides declaratory guarantees for preserving uses covered by exceptions and limitations, without much in the way of ensuring that they are respected.

115 One incentive that platforms currently have to preserve exceptions such as the quotation or parody exception under article 17 is financial: such

188 See G. Spindler (2019) op. cit., at 134.

189 Cf. S. Kreimer (2006) op. cit.

uses are exempted from the communication to the public undertaken by OCSSPs, and are not subject to any obligation of licensing nor remuneration. Therefore, it may be in the platforms' financial interest to detect uses covered by these exceptions and limitations, even for works that are covered by licensing agreements with rightsholders, as such uses should not lead to the payment of remuneration to rightsholders.

116 Moreover, it is also important that OCSSPs strike a balance in their preventive measures and complaint and redress systems. Obligations under article 17(4) should not prevent platforms from sanctioning repeatedly abusive claimants (nor, of course, repeatedly abusive defences by a bad faith user), for example by suspending or restricting their access to copyright claims mechanisms, as some currently do¹⁹⁰. They should indeed be encouraged to police abusive claims, due to the plausible dearth of litigation on such issues¹⁹¹.

117 However, it will probably not prove sufficient, and it may be that effective protection of exceptions and limitations could require states to introduce, in their national implementation of the directive, independent supervision and penalties if OCSSPs fail to implement their obligations under art. 17(4) in a way that prevents systematic interference with the right to freedom of speech, and notably the exercise of the right to quotation and to parody.

118 Getting incentives right for OCSSPs to strike a balance between the interests and fundamental rights of rightsholders and users is a difficult task, due to the power imbalance between the parties at stake, and it may require a comprehensive rethinking of notice and takedown systems (which obviously goes beyond the scope of this article)¹⁹². Until this can

be figured out, a “protection by default” approach might shield many uses covered by exceptions and limitations from a skewed legal mechanism, and avoid further undermining the effective protection of users' rights, compared to the situation under the E-commerce Directive (2000/31).

119 The second issue regarding the effective protection of exceptions and limitations is the lack of accountability for private enforcement of copyright law, either by technical protection measures or by algorithmic systems. Too often, algorithmic regulations or other technical decisions that affect the public are made in private fora, without much (if any) public accountability¹⁹³. Indeed, given that the European lawmaker carefully avoided mentioning the “effective technologies” implicitly required by article 17(4), and given the rather superficial character of the discussions in the stakeholder dialogue so far¹⁹⁴, it is likely that most decisions on the technical implementation of art. 17(4), and as to how to protect exceptions and limitations according to 17(7) and 17(9) para 3, will be left at the discretion of OCSSPs.

That is why we have pleaded for a more active role of public authorities into fostering this discussion, on issues such as the rulification of minimal thresholds for the exception for quotation. But more generally, the concrete implementation of delegated algorithmic regulation should not be left entirely at the OCSSP's discretion but should be set according to precise principles adopted and supervised by a publicly accountable authority¹⁹⁵.

028, available at: <<http://dx.doi.org/10.2139/ssrn.3218286>>; see also A. Kuczerawy, “The Power of Positive Thinking: Intermediary Liability and the Effective Enjoyment of the Right to Freedom of Expression” (2017), 8(3) JIPITEC, p. 226.

190 Cf. *Presentation by Facebook's representative* Fourth meeting of the Stakeholder Dialogue on Article 17 of the Directive on Copyright in the Digital Single Market (16 December 2019), available at: <<https://webcast.ec.europa.eu/copyright-stakeholder-dialogues-16-12>>; see also Cf. P. Keller, “Article 17 stakeholder dialogue (day 5): It all depends”, Communia, <<https://www.communia-association.org/2020/01/21/article-17-stakeholder-dialogue-day-5-depends/>>.

191 Indeed, some national laws do provide a judicial remedy against abusive takedown notices (art. 6. I-4 of the French Loi n° 2004-575 of 21 June 2004, «LCEN law»), but their effectivity is questionable. See however L. P. Loren (2011). «Deterring Abuse of the Copyright Takedown Regime by Taking Misrepresentation Claims Seriously». *Wake Forest L. Rev.* 46, p. 745.

192 On this subject, see Fiala, L., & Husovec, M. “Using Experimental Evidence to Design Optimal Notice and Takedown Process” (2018) TILEC Discussion Paper n°2018-

193 D. K. Mulligan, K. A. Bamberger, *Saving Governance-by-Design* (2018) *Calif. L. Rev.* 106(3), p. 697.

194 Cf. P. Keller, “Article 17 stakeholder dialogue (day 5): It all depends”, Communia, <<https://www.communia-association.org/2020/01/21/article-17-stakeholder-dialogue-day-5-depends/>>; Recordings and documents from the stakeholder dialogue can be consulted on <<https://ec.europa.eu/digital-single-market/en/stakeholder-dialogue-application-article-17-directive-copyright-digital-single-market>>.

195 See generally M. Perel, & N. Elkin-Koren. “Accountability in Algorithmic Copyright Enforcement” (2015) *Stan. Tech. L. Rev.* 19, p. 473. Cf. also the proposal for creating independent, multi-stakeholders “social media councils” with human rights and freedom of expression as guiding principles. GDPi, ARTICLE 19, David Kaye, “Social Media Councils: From Concept to Reality” (2019), conference report, available at: <<https://perma.cc/4AYE-WDNN>>.

120 Such mechanism has been implemented in the recently adopted French law on cyberhate, in which the “Conseil Supérieur de l’Audiovisuel” is tasked with overseeing the proactive duties imposed on internet platforms to take down hate speech. In case of breach of their obligations under the law, notably by committing “excessive takedown of content”, platform operators can be fined up to 20 million euros or 4% of the company’s worldwide turnover¹⁹⁶. Unfortunately, such administrative oversight for excessive takedowns is – so far – absent from the French implementation bill of article 17 of the DSM directive¹⁹⁷.

H. Conclusion

121 What if the new Copyright in the Digital Single Market directive, despite the concerns for its impact on fundamental rights, was in fact an opportunity to ensure a more effective protection of the users’ rights to benefit from exceptions and limitations on online platforms? In this article, we have suggested that this could be the case, provided that we move beyond the traditional approach of formal and procedural safeguards, and take inspiration from a “Free speech by design” approach to embed a concern for free speech in the design of algorithmic copyright enforcement systems. One implication of this approach, we argued, is that exceptions and limitations should be protected by default in any algorithmic copyright enforcement system, such as the ones taken in compliance with art. 17(4) of the DSM directive. We argued that such an approach was required by both the duty for member states not just to provide for but to actively protect the exceptions for quotation and for parody¹⁹⁸, as well as the twofold

obligation for OCSSP to prevent the availability of works for which it has received the relevant and necessary information, while at the same time not preventing legitimate uses, such as uses covered by exceptions and limitation¹⁹⁹.

122 We then went on to discuss how to design quotation- and parody-sensitive algorithms. Regarding the exception for quotation, we concluded that the difficulty is not so much technical, but legal (or political), as the deterministic method we proposed required a rulification of standards in the exception, in the form of “bright-line rules” for assessing minimal uses that can be fairly safely presumed to be covered by the exception. We devised a few examples of what such bright-line rules, which should ideally be negotiated or adopted at the European level, could look like. As to the exception for parody however, our brief survey of the literature leads us to conclude, in line with the common view, that an algorithmic assessment was way out of reach under the current state of the art, if at all possible. Therefore, we argued that a way to attempt to comply with the twofold obligation of article 17(4) with regard to parodies was to curtail the application of preventive measures resulting from art. 17(4) b. and c. to cases of identical or equivalent works or protected objects as those reported by rightsholders. This is also supported by a contextual reading of the text of the directive, supported by the need to ensure a fair balance between fundamental rights.

123 Undoubtedly, this approach will raise objections. The idea of adopting bright lines for the application of exceptions and limitations has been criticized for the risk that they become a ceiling, rather than a floor²⁰⁰. And there is a risk that embedding exceptions and limitations assessment in algorithms will shape human expectations and behaviour in problematic ways²⁰¹. However, considering that the alternative option is either systematic interference, or at best much lower (and opaque) thresholds of tolerance for quotation and parody, and considering that algorithmic copyright enforcement on digital platforms is already shaping users’ behaviour, we think this endeavour is well worth the risk.

124 Of course, OCSSPs should also ensure that other exceptions could be protected under this approach, such as, crucially, the incidental inclusion

existing exceptions or limitations” (emphasis ours).

196 Loi du 13 mai 2020 visant à lutter contre les contenus haineux sur internet, article 7, para 8 and 9.

197 Projet de loi relatif à la communication audiovisuelle et à la souveraineté culturelle à l’ère numérique (5 december 2019). To this day, the text of the bill under consideration does not implement article 17(7) para 1, and only requires OCSSPs to inform their users of existing exceptions and limitations to copyright, which seems clearly insufficient to guarantee their effective protection. However, as we mentioned (*supra*, note 70) the European Commission, in an answer to a parliamentary question, confirmed that the obligation provided by art. 17(7) “must be given effect to by Member States in their implementing legislation” and cannot be considered fulfilled “by Member States by seeking to rely on any general provision informing users about existing exceptions and limitations in the terms of use of the OCSSPs”.

198 Art. 17(7) para 2 : “Member States shall ensure that users in each Member State *are able to rely on* any of the following

199 Art. 17(4) b. and c., read in light of art. 17(7) para 1 and art. 17(9) para 3.

200 G. Parchomovsky, “Fair Use Safe Harbors”, *Virginia Law Review* 93(6), 2007, p. 1483.

201 D. L. Burk, “Algorithmic Fair Use” (2019), *op. cit.*

exception²⁰² or freedom of panorama²⁰³. We chose to focus on the exceptions for quotation and parody because these are the two exceptions which the DSM directive made mandatory in light of their special role in the protection of freedom of expression, which, along with an increasingly harmonized CJEU case law, greatly eases up OCSSPs' task to protect them uniformly across the EU.

125 However, to ensure a fair balance between fundamental rights, all exceptions and limitations should be effectively guaranteed. And of course, as we noted, an optimal guarantee of the effectiveness of exceptions and limitations on digital platforms will likely require rethinking the incentive structure faced by such platforms, as well as their accountability when they exercise such algorithmic copyright enforcement delegated by the lawmaker. However if we simply give OCSSPs free rein in implementing preventive measures following from art. 17(4), without requiring them to safeguard exceptions and limitations by default, it is likely that concerns for cost-efficiency and avoiding legal liability will “encourage the adoption of cheap and unsophisticated filtering tools that lead to excessive content blocking”²⁰⁴.

126 More generally, this article should be taken as a call to go beyond both technological solutionism and legal formalism, and get involved in discussing and framing the practical conditions of algorithmic copyright enforcement on online platforms, in order to ensure an effective fair balance between fundamental rights of rightsholders and users.

127 Now that exceptions and limitations to copyright have finally been recognized as users' rights²⁰⁵ after years of uncertain status, it is about time that their legal guarantees move beyond the declaratory, and be given effect. Providing means of *ex ante* (over-) enforcement for rightsholders, while only providing *ex post* remedies for users' rights cannot be called a fair balance. If we are to rely on algorithmic decision systems for *ex ante* copyright enforcement on OCSSP, we need to make sure that these algorithms are designed to prevent and minimize interferences with fundamental rights such as the right to freedom of speech, by protecting exceptions and limitation by default. In other words, freedom of speech should be guaranteed not merely by remedies, but by design.

202 InfoSoc directive, art. 5(3) i.

203 InfoSoc directive, art. 5(3) h.

204 M. Senftleben, “Bermuda triangle...” (2019), op. cit. p. 8.

205 See CJEU, *Eugen Ulmer*; CJEU, *Spiegel Online*; CJEU, *Funke Medien*, *supra*, note 12.

Jacques de Werra (ed.), Accords de technologie/ Technology Transactions, 2018, 128 p.

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Book Review

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Recommended citation: Pedro Roffe, Book Review: Jacques de Werra (ed.), *Accords de technologie/ Technology Transactions*, 11 (2020) JIPITEC 95 para 1.

Preliminaries

- 1 Technology Transactions is part of an intellectual property (IP) Series published by the Faculty of Law of the Geneva University.¹ It is the 11th volume of a publication launched in 2008. The latest brings together papers presented at a conference organized on occasion of the 2018 Intellectual Property Day. The contributions authored by experienced experts and practioners -Marco M. Aleman, Christoph Spennemann, Mark Anderson, Philippe Gilliéron and Adrien Alberini- are reproduced in the book in their original English and French versions.
- 2 Technology transactions embrace a diversity of contractual relationships wherein the parties agree to share, under mutually agreed conditions, a technology owned by one of the parties as intellectual property rights (IPRs). The book deals with a range of transactions including patent assignments, licensing, research and joint development. The central purpose of this work is to offer an overview of perspectives on some of the thorniest questions facing technology agreements. A unifying thread of the five contributions is that, notwithstanding their

economic relevance, technology transactions do not figure prominently in multilateral legal instruments and in the case of domestic law their treatment is far from being homogenous. The lack of harmonization is striking in an area that is transnational by nature. Licensing agreements generally cover several geographical areas.

- 3 The volume begins with a preface by Professor de Werra, who has devoted an important part of his academic work to these issues, underlining that an efficient and sound use of knowledge is one of the drivers of the globalized knowledge economy in which businesses, institutions and societies operate. He refers particularly to knowledge of a technical nature -often protected by intellectual property law as in the case of patents, trade secrets, copyright - which is transferred and disseminated in contractual transactions of a diversity of forms. Despite their frequency, technology agreements continue to raise multiple legal issues not only internationally, but also at the national level. According to Professor de Werra, there are many reasons for this: technology agreements are at the intersection of distinct legal disciplines (notably contracts, intellectual property, competition law). Moreover, their specific subject matter are intangible assets that by their very nature

¹ <<https://www.unige.ch/droit/jdpi/>>.

evolve, a trait that gives particular dynamism to these agreements.

Patent Transactions. Limited regulation in the multilateral legal framework and diverse legislation and practice at the country level

- 4 The first chapter by Marco M. Aleman, senior official in WIPO, provides an overview of the role of patents in technology transactions with emphasis on the international legal framework and on the key issues that according to the author need to be borne in mind in contracts. Aleman focuses on assignments and licensing of patent rights. His main premise is that innovation serves as a key driver of modern economies and that a large number of enterprises focus their activities in developing technologies. For that reason, intellectual property rights (IPRs) play an essential role in supporting these economic undertakings by protecting the intangible fruits of this work. IPRs support entrepreneurs to better manage their investments providing certain control over their use and diffusion.
- 5 Patent transactions do not refer to a single type of contract, but rather to an assortment of arrangements that serve a range of purposes, from achieving access to technology, jointly developing new ones, or building competitive positions. The author asserts that it would be a challenge to create an exhaustive set of international rules capable to take into account this diversity of transactions and their motivations. However, there are certain areas where parties may benefit from a set of default rules particularly to fill gaps where agreements are silent on a precise issue. A set of best practices or default rules could also lay the groundwork for further efforts of harmonization.
- 6 Aleman expands on the role played by the World Intellectual Property Organization (WIPO) as the global forum for intellectual property services, policy, information and cooperation. He observes that despite the extensive network of legal arrangements administered by WIPO (26 treaties), provisions dealing directly or indirectly with patent transactions are very rare. In the Paris Convention (1883), which is the backbone of the industrial property multilateral legal system, only a single provision deals with transactions, namely Article 6quater on the assignment of marks.
- 7 An interesting feature in this chapter is the comparative law analysis and the specific examples of how different legal regimes deal with matters that relate to the assignment of patent rights. At the same

time, the author underlines that the variations in patent regimes may present challenges for those involved in trans-border transactions that could even impair an effective transfer of technology. The author mentions the mixture of approaches taken by domestic law on who owns a patent in the case of inventions originated in the course of an employment relationship.²

- 8 In his concluding remarks, Aleman stresses the significant variations in the legal framework that governs patent transactions across countries. For cross border transactions, understanding the differences can be critical in determining if the parties can actually provide the rights they intend to assign or licence and whether the transaction will have any legal effect. In this context there have been limited efforts to establish an international legal framework to guide such transactions. The author asks rhetorically if international harmonization is the answer: Is there a need for such default rules?

International Technology Transactions from a Development Perspective

- 9 Christoph Spennemann, senior official in UNCTAD, deals in his contribution with a development perspective of international technology transactions, namely the constraints faced by developing countries in negotiating favourable technology deals. He emphasizes the role played by technology in developing countries' efforts to transition from commodity dependency and cheap labour to a knowledge-based economy. The chapter discusses the important role transactions with foreign investors play for the creation of technological capacity in importing countries. The author calls attention to the fact that technology transactions from this perspective are not limited to formal per se intellectual property agreements, but also comprise arrangements to transfer knowledge and know how

2 For example, in both Japan and the United States patents are owned, by default, by the inventors. Employers who wish to own the rights to inventions created during employment must so provide by contract. Swiss law follows a similar approach. In contrast, in other countries, such as Brazil and Colombia, inventions made during the course of employment or under the scope of a service contract are, unless otherwise agreed, the property of the employer. The law in different countries also differs in terms of requirements to record patent licences. In some developing countries agreements need to be recorded to be legally enforced. This is not the case in the USA and Switzerland.

that might eventually involve one specific category of intellectual property.

- 10 In the view of Spennemann, informal means of transferring technologies are as relevant as formal means, because they can establish better grounds for formal means such as a licensing agreement. Informal means often play a key role in creating domestic “absorption” capacity, i. e. the ability of domestic stakeholders to understand and learn foreign technologies. Without such absorption capacity, attempts to successfully transfer technology are likely to fail. The creation of absorption capacity on the receiving end is thus the first step in the technology transfer process.
- 11 He backs his conclusions by a number of interesting case studies carried out by UNCTAD in the recent past particularly in Argentina, Colombia, Ethiopia and Uganda. One positive factor is the support and role played by public institutions to enhance the promising aspects of such transactions. In the most successful cases, factors such as in-built research and development capacity in the recipient firm plays a key role. The case study on Argentina demonstrates, for example, the importance of endogenous technological capacity of the recipient firm to attract foreign investors under mutual beneficial licensing terms.

International IP transactions: arguments for developing a UN standard

- 12 The central message in Mark Anderson’s chapter is the need to develop a set of international standards dealing with intellectual property transactions, which could be applicable to different categories of IPRs and to different types of transactions, including assignments and licences. He argues that although IP laws are mostly national, international treaties harmonise IP laws in different ways, whether through:
 - a single application route (as in the case of the Patent Cooperation Treaty or the European Patent Convention);
 - a single, multi-country form of protection (as in the case of pan-EU trademarks, registered designs and unregistered design rights); or
 - mutual recognition of national IP (as in the case of copyright under the Berne Convention).

- 13 The main focus of national IP laws and of international measures on IP has been on areas of subsistence, ownership, validity, infringement and enforcement. By contrast, the transactional aspects of IPRs – how do you assign, license or grant a security interest over rights, and what terms apply to such a transaction – have historically received little attention, both at the national and international level.
- 14 Anderson underlines that domestic laws on IP transactions are patchy in their coverage, inconsistent between IP categories, and unpredictable between countries. In many economies there is no coherent corresponding set of laws, and it may be necessary to draw on general contract law principles, or principles from traditional property law, to fill in the gaps, sometimes with unexpected consequences. As a result, litigating IP agreements is a burdensome process with an uncertain outcome. This is detrimental to an efficient system of international trade.
- 15 Anderson suggests that gaps in transactional IP laws can be addressed through detailed terms in licence agreements and other IP agreements. However, many of the agreement templates that are used for IP transactions are of poor quality and are not entirely appropriate or fully understood by the parties using them. Given the international nature of many transactions, it would be sensible to develop new standards to govern them at the international level, in areas such as the interpretation and enforcement of IP agreements, and the terms that should be implied into them. He provides the example of the United Nations (UN) Convention on the International Sale of Goods as a template for the methodology of developing such standards and for the types of issues that may need to be addressed.

IT Agreements – from software to cloud services

- 16 Philippe Gilliéron, an information technology agreements (ITA) practitioner, provides a detailed overview of ITA in the current setting. As the author states, ITA are a world of their own. It is a generic reference that encompasses several types of agreements all related to the exploitation and use of digital resources.
- 17 Gilliéron highlights the specificities of each category of agreement and their complexities in a new area of law where according to the author there is absence of expertise and proper understanding of the IT industry for most legal professionals. These factors add greater risks to consumers. According to the specialist, if not properly handled, IT agreements do indeed bear significant legal risks that may

easily put business sustainability at stake. In his chapter the author provides insights into this world, pointing out salient features to bear in mind when negotiating this type of agreements, particularly when intellectual property rights are involved. He also cautions that this ecosystem changes quickly, and so does the IT environment which is at the core of this evolution. He foresees that not very far in time we will see new categories of ITA addressing emerging topics such as virtualization, blockchain, artificial intelligence or machine learning to name a few.

- 18 The author provides further insights into the negotiation of these agreements underlining that bilateral agreements between one given provider and a given customer do not raise many concerns from a structural standpoint. However, agreements that may be contracted by a group of companies, either at the level of the provider, the customer, or both, are different. Negotiating ITA at the level of a group can serve several purposes: (i) delineating the terms of a framework agreement at the central level to ensure that conditions will align with the group's policies and compliance requirements avoiding inconsistencies or market distortions; (ii) improving commercial terms at the central level to achieve better pricing as well as exercising pricing control; (iii) aiming at avoiding inconsistency in having multiple providers of the same product or service to the affiliates by ensuring that preferred providers will be chosen as a vehicle to be retained at market level; thus, ensuring better control and pricing through volume.
- 19 Gilliéron points out that ITA must always bear in mind potential competition law issues, which leads in to the last chapter of the book.

Accords de technologie et droit de la concurrence: de l'approche plus économique à la saisie par l'abus de position dominante

- 20 The final chapter by Adrien Alberini deals precisely with competition issues with particular emphasis on abuses of a dominant position.
- 21 According to the author, his main purpose is to illustrate the close relationship between competition and intellectual property law. In European law, technology agreements are mainly governed by the Treaty on the Functioning of the European Union (TFEU). Accordingly, agreements which have as their object or effect the prevention, restriction or distortion of competition within the internal market, are automatically void. The parties to

such an agreement may, however, benefit from an individual exemption if the agreement produces pro-competitive effects.

- 22 An interesting feature of this chapter is the analysis of recent developments in areas such as the application of technical standards and the increasing role being played in recent years by competition law with respect to technology agreements. "Put differently, one can venture to assert that intellectual property, at least when it is contractually exploited, is always increasingly 'captured' by competition law." European competition law plays a predominant role as a model (or legal benchmark) when there is no specific regulation at national level, as is the case in Switzerland where the Competition Authority has chosen not to adopt rules applicable specifically to technology agreements.
- 23 What appears evident in the evolution of European competition law is the emphasis given to economic rather than legal considerations. Closing gaps in a way with American law, the rule of reason and a case by case approach appear to emerge. This applies in particular to issues such as pricing, quantity and territoriality clauses. More specifically with regard to technology agreements, attention is paid to agreements which, disguised as technological cooperation, are essentially intended to allow the parties to introduce market distortions as well as to clauses which indirectly have as their object or effect a hard restriction of competition.

Conclusions

- 24 This collection of articles presents a stimulating synopsis of recent trends and developments in technology agreements and the role played particularly by IP and competition law. A central common thread is the realization that multilateral principles and rules constitute a major legal deficit in this important area so closely related to the global knowledge economy. The latest generation of multilateral agreements, such as TRIPS, fails adequately to provide specific standards and principles that could facilitate business and the diffusion and transfer of technology. On the other hand, TRIPS is one international treaty that does acknowledge licensing and assignment of patents as an important component of patent holder rights. The Agreement is also one of the first to provide general principles on the control of anti-competitive practices in transfer of technology transactions. In this context, as described in one of the chapters of the book, the international community failed to reach agreement on an international code of conduct on transfer of technology, an initiative promoted by a group of developing countries in the 1980s.

- 25 A great merit of this publication is precisely to revisit the challenges of agreeing at the multilateral level on principles and standards to promote security and a level playing field on rules on technology cooperation and diffusion. The editor should be congratulated for his commitment to this area of law, essential in our global knowledge economy.
- 26 Naturally, the book being the result of edited transcripts of presentations made at the conference held in Geneva in 2018 has some deficits and oversights, but overall it is a very useful and practical source to enlighten further work and research on future multilateral undertakings in setting principles and standards on technology transactions.
- 27 The substantive coverage of the book is broad and rich, expanding from a detailed analysis of patents as an important component of technology transactions to case studies on technology transactions and their impact on developing countries. Moreover, it includes relevant analysis on the gap in the multilateral system, contrary to the range of treaties governing protection of IPRs and facilitation for extending their protection in third countries. A third feature of the book is the detailed examination of new forms of agreements focusing on information technology in the case of software and cloud deals. Finally, the book concludes with a very helpful overview of the relationship between technology agreements and competition law particularly from a European law perspective.
- 28 Bringing to this publication practitioners, academics and experienced staff from international institutions working in this field is without doubt an important asset of the book.

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