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Intellectual Property
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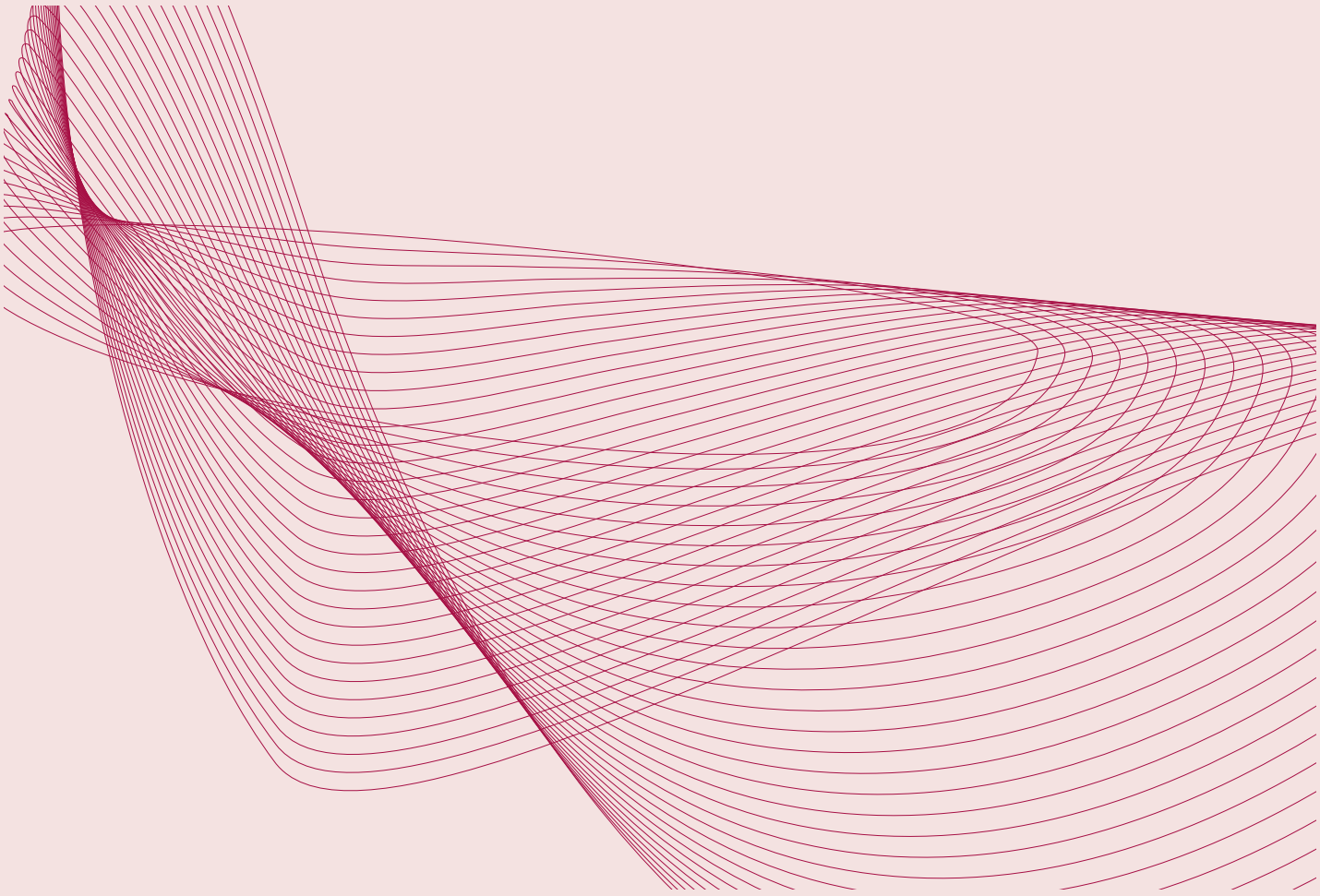

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Editorial

The ongoing Covid-19 pandemic has the world in a severe grip, with national measures in Europe ranging from lockdowns to less severe restrictions. The world is waiting for a vaccine, and a promising breakthrough was reached when Pfizer/BioNtech published its first results in November 2020. Even though it is still unsure when the vaccine will be available, and to what extent a vaccine will contribute to the end of the coronavirus pandemic, it is a ray of hope in the current situation. Sweden has from the early days of the pandemic employed less severe restrictions than neighbouring countries, and this choice has been hotly debated in Sweden and around the world. But measures are in place. Many work from home, do not use collective transports and order all food through online services. With the death tolls still rising in November 2020, more severe restrictions are debated.

In this time where the possibilities of travelling and meetings are more restricted than ever, we are turning to digital tools for work, education and social interaction. Digital platforms and online services offer makes it possible for many parts of society to continue working and studying, albeit in new ways. Workplace meetings are being replaced by virtual meetings, a new kind of space we all have had to adapt to. Suddenly your colleague reports the latest sales figures in new and exciting surroundings, for instance in front of the Golden Gate bridge in San Francisco, or in space. Or worse, all your colleagues' cameras are turned off for your presentation, and your frame is the only one visible in Zoom.

Stockholm IP Law Review has also adapted to this virtual reality. The review is honoured and pleased to report that our 2020 seminar entitled "IP in the Digital Environment" was held as a virtual seminar on the 3rd of December, with more than 250 participants. The theme for the seminar was focused on the issue of website blocking injunctions in European law. The keynote address, "Website-Blocking Injunctions and Streaming Server-Blocking Injunctions: The State of the Art", was delivered by Sir Richard Arnold, Lord Justice of Appeal at the Court of Appeal of England and Wales. Other speakers included Karin Cederlund, partner and advokat at Sandardt&Partners in Stockholm and Stefan Johansson, judge at the Patent and Market Court in Stockholm, who held presentations on "Website Blocking from the Swedish Perspective". Eleonora Rosati, Associate Professor at Stockholm University addressed the topic of "Roasting the Host: From the Safe Harbour to the Direct Liability of Platforms in IP Cases". The Stockholm IP Law Review is deeply grateful to speakers, panellists and participants who contributed to making this event such a success. Time will tell whether the 2021 seminar will also have to virtual, or whether we will be able to welcome you to a real-life seminar in Stockholm next year.

At Stockholm University, the Master of Laws (LL.M) in European Intellectual Property Law Programme is wholly conducted online for the year 2020/21. Since the start of the second wave of the virus, most other courses at the university are now also run online. Despite the challenges that this kind of education poses, notably the lack of social contacts between students as well as teachers, the new dedicated student editorial team at Stockholm IP Law Review has done an excellent work with creating this issue 2/2020, which you are now reading.

Issue 2/2020 of Stockholm IP Law Review focuses mainly on copyright-related issues and in particular such that concern use of copyrighted material in the digital environment. An important highlight of issue 2/2020 is of course the interview of Lord Justice Richard Arnold. Sir Arnold kindly agreed to be interviewed by our co-chief editors Riana Harvey and Alexandre Miura. His views on e.g. recent case law, IP law after Brexit and career matters are published in this issue. In addition, we are proud to publish the work of three of our Stockholm EIPL Master Programme alumni, namely Gustav Gierlöff, Isabella Lorezoni and Saar Hoek. Saar writes about the limits and rights conferred to so-called Free Open Source Software (FOSS) and their relation to copyright and patent rights respectively. Isabella focuses on the challenges posed by Artificial Intelligence to intellectual Property, an unsolved and ongoing conflict issue. As the only non-copyright article in this issue, Gustav is exploring the topic of likelihood of confusion in trade mark law, notably the issue of similarity of goods-test. Last but not least, Vinge associates Carla Zachariasson and Anna Li explain the scope of protection for copyright-protected public artworks published online in the form of photographs in Sweden against the background of two recent Swedish rulings.

The editorial team at Stockholm IP Law Review hope you will enjoy this issue, and that you are keeping safe and staying healthy. And as a final reminder - don't be that colleague who forgets to press the mute button!

Åsa Hellstadius & Frantzeska Papadopoulou

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Stockholm Intellectual Property Law Review

Interview with Lord Justice Arnold

By Riana Harvey and Alexandre Miura

ABSTRACT

Lord Justice Arnold is renowned in the UK and the EU for his judicial contributions to the field of intellectual property (IP), and currently sits as a Justice of Appeal in the England and Wales Court of Appeal. As a judge, he has made 14 referrals to the Court of Justice of the European Union (CJEU) between 2004 and 2019[1]. Our Chief-Editors had the pleasure of talking with him and getting his opinion on a broad range of topics, from recent case law developments, to the future of IP policies in the UK and in the EU, to website blocking and, finally, some valuable thoughts for IP students who wish to enter the field in the future.

CAREER

SIPLR: You have had such a varied background, tackling all areas of IP law, and have been involved in a wide variety of judicial boards, from the England and Wales High Court, to the Court of Appeal. What differences have you found, if any, when adjudicating on matters in these different forums?

Arnold LJ: I would say that the key distinction under any system is between sitting in the first instance court and sitting in the Court of Appeal.

As a first instance court, you obviously have to be the first person to take a decision on the case, and you then have to deal with the facts and the law and see what conclusion you arrive at. By contrast, when you are sitting in an appellate court, there's already been one decision. So, the key question for any appellate court is whether there is anything wrong with the first instance decision. So, your task is one of review rather than taking a decision afresh.

Furthermore, under most systems, a court of appeal decision has more precedential value than a first instance decision. And so, appeals courts are naturally more concerned with the state of the law as opposed to the decision in the individual case, although, of course, the decision in the individual case remains important. So, I think all of those considerations are true under any system, and that's true even if you are operating under a civil law system which doesn't operate strict precedent, because even if you don't operate strict precedent, it's still the case that appellate decisions will influence lower courts subsequently.

But over and above those general considerations, in the system in which I spend most of my time, which is that of England and Wales, there are further factors which highlight the difference between sitting in first instance and sitting in the Court of Appeal. The first one is that in our system, if you're sitting at first instance, generally speaking, you are sitting on your own as a single judge. So, in all of my first instance decisions, that's been my position and so it's been purely down to me to make the decision and to write the judgment.

By contrast, in our courts of appeal, there's always a multiplicity. Usually in the Court of Appeal it's three. Occasionally, it can be two. Very rarely, it can be more than three, although I have personally never had that experience. And obviously, if you go on up to the Supreme Court, then there is at least five, although I've not had the privilege of sitting in that court. There's a big difference between sitting on your own and sitting in a collegiate court for the very obvious reason that, if there's more than one of you, first of all, you need to talk to the others. And secondly, you need to reach a decision. And under most systems, that will involve obviously a majority decision. But in most systems, you will try and arrive at a consensus if you can. So that's quite a big difference.

The other big difference under our system is that the first instance court is responsible for fact-finding, whereas that's not the responsibility of the Court of Appeal, and that makes a big difference to the work of the judge. There's a lot more for the judge to do when sitting at first instance than there is at the Court of Appeal.

Obviously, we have under our system disclosure documents, we have evidence from factual witnesses, we have evidence from expert witnesses, and, as a result, there is a lot of material for a first instance judge to synthesise when writing a judgment. I am well known for writing lengthy judgments at first instance because of those factors, among other reasons. By contrast, the judgments that I have been writing in the Court of Appeal have tended to be much shorter for the very good reason that the facts have already been found by the court below, so I don't need to do that work that I was accustomed to doing when sitting at first instance. That makes a really big difference, and it means that you can concentrate on the legal issues that are raised on the appeal.

So, I think those, generally speaking, would be the differences that I would highlight.

RECENT CASE LAW DEVELOPMENTS

SIPLR: Under s 1 of the Copyright, Designs and Patents Act 1988 ('CDPA'), the UK has a closed list of works that may be protected by copyright. The CJEU *Cofemel*[2] decision has clearly opened the door to queries as to whether it is possible to interpret UK copyright law in line with *Cofemel*, which was briefly tackled in the IPEC case of *Response Clothing*[3] from last year (Hacon J said UK copyright law was compatible to a point). Do you think that *Cofemel* has upended UK law as we know it? Would you maintain the position that you took in *SAS v WPL* (i.e., that a work can be a work outside of the kinds listed in s1 CDPA, provided that it complies with the Berne Convention[4]?)

Arnold LJ: Well, two initial points need to be made. Firstly, I have got to be careful what I say, because this is a question that could be coming before me in a future case. In particular, I don't know if there's going to be an appeal in the *Response Clothing* case, but there might well be an appeal in that case. And if so, it's quite likely that I would be sitting on that panel and therefore I must be careful not to prejudge any of the arguments that might arise in that case. The second observation I would make is that I didn't actually decide this point in *SAS v WPL*. I merely recognised that, on the state of the jurisprudence of the Court of Justice of the European Union as it then stood, it would be arguable that a closed list of works such as that we have under the UK Copyright Act was not compatible with the EU Directive.

Now, I think it's pretty plain that that argument receives more support from subsequent case law and in particular from the *Cofemel* decision. But there are still arguments available to the contrary. In particular, I think one thing that can be said, which is relatively uncontroversial in view of what His Honour Judge Hacon said in the *Response Clothing* case, is that there are two alternative possibilities, at least, that are open to the UK even before one gets to Brexit.

The first is the 'nuclear' option of saying that the 1988 Act is incompatible with EU law. But the second one is a more fine-tuned response, which is to say that the Act is not incompatible with the Directive, because what you can do instead is to interpret the Act in a way that makes it compatible with EU law. And this would be an application of the *Marleasing*[5] principle of interpretation, according to which national courts are required to interpret their national law insofar as possible in a way in which is compatible with EU law.

Now, as I'm sure you'll appreciate, that's exactly the line that Judge Hacon took in the *Response Clothing* case because he was faced with the question of what is a work of artistic craftsmanship. That is, even as a matter of purely domestic law, not an easy question to answer, and there is some room for manoeuvre for any court in answering that question. But if you overlay on that the *Marleasing* obligation, then it's not too difficult to arrive at the conclusion

1 Lord Justice Arnold discusses his experiences and conclusions on these references in Arnold, R. 'References to the Court of Justice of the European Union: Experiences of a National Judge 2004-2019' (2020) International Review of Intellectual Property and Competition Law 51, 1086-1106, available at <https://doi.org/10.1007/s40319-020-00973-4>.

2 Judgment of 12 September 2019, *Cofemel - Sociedade de Vestuário SA v G-Star Raw CV*, C-683/17, EU:C:2019:721.

3 *Response Clothing Limited v The Edinburgh Woollen Mill Limited* [2020] EWHC 148 (IPEC).

4 Berne Convention for the Protection of Literary and Artistic Works.

5 Judgment of 13 November 1990, *Marleasing SA v La Commercial Internacional de Alimentacion SA*, C-106/89, EU:C:1990:395.

that he did, that what you've got to do is to adopt a broad and flexible interpretation of that term in the Act. If you do that, then you can arrive at a position where there's relatively little room for argument that you need to say that the Act is completely incompatible with the Directive, because if you interpret broadly all the categories that are available under the Act, you then struggle to find anything that would not be protected under the Act, but would be protected if you had an open-ended system. So, it's possible to say that, even if it is correct to say that you need to interpret the categories broadly, it doesn't follow that the Act is incompatible with the Directive.

Furthermore, you are still left with the question of how broadly you really need to interpret any particular category and what really does need to be protected on the facts of any individual case. Don't forget that the Court of Justice has, by no means, indicated that everything under the sun must be protected regardless of any requirement. On the contrary, the message one gets from the jurisprudence of the Court of Justice is that there are criteria that need to be satisfied, and that satisfying those criteria is by no means to be taken as a given in any particular case. So, in addition to what was said in *Cofemel* itself, we also have decisions like, for example, *Funke Medien*[6], where the Court has made it pretty clear that the requirement of an intellectual creation is a very real and meaningful requirement, and therefore it's not going to be the case that every potential work is necessarily protected by copyright.

SIPLR: With Brexit, do you think that political influences, for example, legislative intervention after the end of the Brexit transition period would play a role in influencing this decision any further beyond the judiciary and their decisions?

Arnold LJ: Well, it is obviously the case that if there is legislative intervention in the UK, then the position may change. But - as is well known - I've been calling for a new Copyright Act for five years[7], and so far, there has been deafening silence from the government. Moreover, for reasons with which we are all familiar, and I don't just mean COVID-19, the likelihood of any legislation in the field of copyright from the UK government emanating any time soon is low, post-Brexit. There are going to be higher legislative priorities. That is inevitable.

So, while it's theoretically possible that there will be new legislation in the field of copyright, and I for one would welcome new legislation, as I have made clear, it seems to me that in the short to medium term, it simply isn't going to happen. As for judicial evolution, I think that question is probably best answered in the context of your next question.

POLICY AND THE FUTURE OF IP

SIPLR: It is well known that you have referred many cases to the CJEU, and Brexit will be putting an end to the possibility to do so. How do you think IP law in the UK and the EU will be impacted in this regard post-Brexit?

Arnold LJ: The first and most obvious effect is that we won't be able to refer questions to the Court of Justice anymore - that jurisdiction will cease on the 31st of December (2020). Secondly, obviously, we will no longer be subject to the supremacy of EU law. As we were just discussing in theory, that will make it possible for legislation to depart from the *acquis*. And moreover, we won't be subject to future EU Directives. Indeed, assuming that the current timetable is adhered to, we won't be required to implement the recent Directive on Copyright in the Digital Single Market Directive (DSM Directive)[8].

So, there is the possibility of legislative divergence, firstly, in terms of not implementing future EU Directives and secondly the possibility of UK legislation that will alter past EU Directives which have been implemented in the UK. The other element in the equation is the one that we were touching on before, which is the question of judicial interpretation. As to that, it very much remains to be seen how matters are going to play out in the future. There is obviously the potentiality for judicial interpretation to diverge, but I suspect that's going to be a rather long-term process. In the EU Withdrawal Act 2018[9] that was passed by the UK Parliament, it was provided that all Court of Justice jurisprudence that was in place as at the date of departure from the EU [31st January 2020] or, in effect, the end of the transitional period, that's to say 31st December 2020, would be binding on all UK courts below the Supreme Court, and the Supreme Court would only be able to depart from such decisions to the extent that it could depart from its own previous decisions. Now, the government has recently announced that they are going to amend that legislation so as to provide that the Court of Appeal will be able to depart from Court of Justice precedents, which will make things a little bit easier[10].

But even so, even if you say to the UK courts at Court of Appeal level and above that they can depart from Court of Justice precedents, the question is: why should they do so if there's no change in the underlying legislation? You've got to be convinced that the Court of Justice has got it wrong.

Moreover, you've got to be convinced in circumstances where the system of references represents an ongoing dialogue between national courts and the Court of Justice. So, take the example of communication to the public - we've got, in round terms, about 20 decisions so far, maybe a little more, and what we have is a process of evolution and refinement of the Court of Justice's case law. So, in circumstances where the underlying legislation in the UK hasn't changed because there has been no legislative intervention by the UK Parliament and because there's no relevant change in the EU *acquis*, why should a court in the UK suddenly decide that it is going to strike out on its own in terms of interpreting legislation? Even if you think that maybe some of the past decisions are not quite right, maybe in a future decision of the Court of Justice they will refine it in a way that makes it more acceptable. So, the question of judicial interpretation is going to present the UK courts with a real headache as to what the right approach is going to be. While there is plainly potential for divergence in the medium to long term, I don't think it's going to be a quick process.

WEBSITE BLOCKING

SIPLR: Website blocking is obviously not available throughout the world, and whilst the UK has led the way for such developments, some countries have only just accepted basic website blocking as a means of tackling online IP infringement (Canada in November 2019[11]), with others not accepting it as a possibility as of yet. Do you think that website blocking orders as a tool is still more effective than other remedies?

Arnold LJ: First of all, I think we need to define our terms, so in answering this question I am going to take website blocking as including not just blocking of static websites, but also blocking of streaming servers, because, as a matter of practical reality, static websites are history. Nobody is interested in static websites anymore; the name of the game is streaming. But, if we take website blocking to include streaming server blocking, then I think the answer I would give to the question is that I have an open mind on the subject, but as of yet, I have not seen anything that looks to be more effective. If people do come up with more effective solutions, then that is fine.

Obviously, there is the potential going forward for two other more radical solutions, the first of which is licensing - some form of collective licensing solution - but I do not anticipate that happening anytime soon. The other is increased use of filtering by platforms, and we see moves in that direction as a result of the DSM Directive. But, if we leave those two possibilities out of account and purely look at it from the right holder perspective, it seems to me that really website blocking is probably the most effective solution that is available, and I certainly have not seen any good evidence to suggest there is anything more effective.

SIPLR: In the *FAPL*[12] cases, dynamic website blocking was possible apparently because of a technology implemented by the FAPL to trace the origin of the infringing server. Do you think that this technology or type of website blocking can also apply to other platforms (e.g. Facebook, Instagram), in which communication to the public of copyright-protected works can occur? As a follow-up to this question, do you think that dynamic website blocking would be a possibility also in the trade mark field, for instance, to prevent websites from selling counterfeit goods (especially in light of the *Cartier*[13] case?)

Arnold LJ: The *FAPL* cases that I had did depend upon the availability of the technology, and the technology which had evolved by that point in time was really quite remarkable, even viewed from the perspective of late 2020 because, by that point in time, it had become possible for the streaming servers to be identified and moreover for them to be blocked in real time. So, if you had a streaming server that was streaming illegal streams of a Premier League football match, you could turn on the block when the football match started and turn off the block when the football match stopped. That was really a quite remarkable piece of technology, and that was what made that whole area of the case law so interesting. What it meant was that you could have blocking which was highly targeted and therefore highly proportionate, and that is why I made the orders that I did. I think the interesting thing is

6 Judgment of 29 July 2019, *Funke Medien NRW GmbH v Bundesreoublik Deutschland*, C-469/17, EU:C:2019:623.

7 Lord Justice Arnold published an article in 2015 which explores this further: Arnold, R. 'The need for a new Copyright Act: a case study in law reform' as part of the Herchel Smith Intellectual Property Lecture 2014. Available at <https://doi.org/10.4337/qmjip.2015.02.01>.

8 Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC.

9 European Union (Withdrawal) Act 2018, available at <https://www.legislation.gov.uk/ukpga/2018/16/contents/enacted>.

10 Amendment available here: <https://www.legislation.gov.uk/ukdsi/2020/9780348213683/contents>.

11 See decision of the Federal Court in Ontario, Canada, in *Bell Media Inc. and others v GoldTV.biz and others* [2019] FC 1432.

12 *FAPL v BT* [2017] EWHC 480 (Ch).

13 *Cartier International AG and others v British Sky Broadcasting Limited and others* [2016] EWCA Civ 658.

that so far, the only cases in which rights holders have applied for those sorts of orders have been cases involving live sporting events - so we have had football and we have had boxing in this country.

It might have been expected that there would be more rights holders who were interested in obtaining streaming server blocking orders in cases involving other sorts of content, particularly given, as I have observed previously, that content is consumed nowadays by most consumers through streaming. It doesn't involve downloads from static websites. That is very old-fashioned technology nowadays, so one would have thought there would have been interest from rights holders in other areas of copyright content in going down that road. But, so far, there doesn't seem to have been that much interest in it in this country, and I'm not quite sure whether there has been more interest in other countries.

So far as the other aspect of your question is concerned, which is extending outside copyright towards trade marks, of course there you are much more in the realm of static websites than streaming servers and therefore you are less dependent upon the technology. The problem with it is one which was manifest in the *Cartier* case, the whack-a-mole problem (blocking one source and then another popping up). But the evidence suggests that it is just about worthwhile from the right holder's point of view, certainly in the context of the live sporting events, it is apparent that rights holders like FAPL do think it is worthwhile.

But when it comes to sources of counterfeits and grey market goods, then I think it is quite telling that no rights holders have followed Cartier's example. If you ask yourself, well, why have no trade mark proprietors followed Cartier's example, I think the answer is obvious: you need to block potentially hundreds, if not thousands, of websites if you are going to be effective, and that is a very tall order from the perspective of gathering all the necessary evidence and then getting court orders and then getting them implemented, particularly given the decision of the Supreme Court that the rights holders have got to pay all the costs of implementation[14]. And, of course, the more sites you are blocking, the higher the implementation costs. So, I suspect, based on the lack of activity on the part of trade mark proprietors since *Cartier*, that we are not going to be seeing much more in that field, and instead they will be looking for alternative ways forward. But who knows! I may be proven wrong.

[14] *Cartier International AG and others v British Sky Broadcasting Telecommunications Plc and another* [2018] UKSC 28.

[15] Human Rights Act 1998, available at <https://www.legislation.gov.uk/ukpga/1998/42/contents>.

CONCLUDING REMARKS

SIPLR: What would you say is the most valuable thing that you have learnt in your career in IP? What advice would you feel like giving to junior professionals wanting to practise IP?

Arnold LJ: That is a very difficult question because I have been in the field of intellectual property now for quite a long time - I'm not going to say exactly how long, but it is more than three decades - so I have learnt quite a lot in that time. I think I would offer three pieces of advice: the first is one that may sound unexpected but is actually quite important, and it is this: to be a good IP lawyer, you have to be good at other areas of law. And I'll explain what I mean by that.

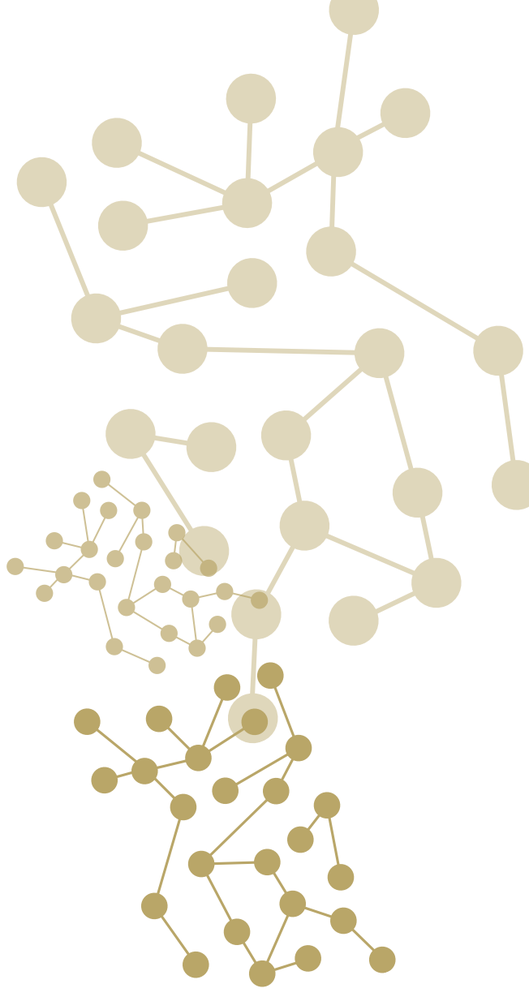
Intellectual property law does not exist in a vacuum - on the contrary, it interfaces with a lot of other areas of law. So, to give some obvious examples, most intellectual property is dealt with by way of contracts; therefore, you need to be a good contract lawyer. An awful lot of the intellectual property disputes that I have dealt with over my career, both as a barrister and as a judge, have really been contract disputes. They involve intellectual property, but the real dispute has been about contracts. Secondly, infringement of intellectual property is a form of tort, so you need to be a good tort lawyer. Thirdly, in our system, in order to really deal with intellectual property properly, you have to be a good equity lawyer, and the reason for that is that a lot of the judge-made law that fills the gaps between the legislative provisions comes out of equity - some of it comes out of the common law, so for example, accessory liability, that is a common law doctrine coming out of ordinary tort law, but a lot of the law comes from equity. So, take an obvious example, the remedy of an injunction - that is an equitable remedy, and so equitable principles are applicable when deciding whether or not to grant an injunction and that has always been the case. Likewise, the remedy of an account of profits, that is an equitable remedy. So, to be a good IP lawyer, you have to have a sound grasp of equity. And so it goes on.

Just to reinforce the point and to give me a bridge to my second piece of advice, I remember when the Human Rights Act 1998[15] was coming into force in the year 2000, some intelligent and perspicacious person organised a seminar with the title 'Intellectual property and human rights', and I remember very well my reaction to that at the time - this is over 20 years ago, don't forget - was to say: what on earth are they on about? They are two different subjects, this is oil and water, they don't mix, they have nothing to do with each other. Well, how wrong could you be! What I now know, having learnt better in the intervening 20 years, is that to be a good IP lawyer you have to be a good human rights lawyer, as what we now appreciate is that there is a massive interface between intellectual property law and human rights law. And in fact, it goes further than that, which is that increasingly we see the phenomenon of constitutionalisation of intellectual property. So, you have not only got to be a human rights lawyer, you have to be a constitutional lawyer as well. So, as I have been saying, to be a good IP lawyer you have got to be abreast of other areas of law, and you can't be stuck in the silo of intellectual property law.

That takes me to my second piece of advice, which I think I have already hinted at, which is to keep an open mind. You can form a view on something but subsequently learn that you are completely wrong, and as I say, my reaction to the idea that intellectual property law and human rights law had something to do with each other is a good example of that. I thought they had nothing to do with it, and I am happy to admit I was completely and utterly wrong. So, keep an open mind, and be prepared to revise your opinions because you may well find as time moves along that things emerge which falsify your original opinion. The third piece of advice is one which I think flows from a lot of what we have talked about this afternoon, which is: don't be parochial, don't be insular. What I mean by that is that we can all learn from each other.

When I started learning the law in England a long time ago, you could still see vestiges of an attitude which amongst former generations of English lawyers was very common indeed, which was to say that English law is best, we have nothing to learn from anybody else. And that is an attitude which you can still find manifested in some other jurisdictions and some other courts. A well-known example is the US Supreme Court, where they take it as axiomatic that they have nothing to learn from the jurisprudence of other courts, a view which of course was very force-fully articulated on numerous occasions by the late Justice Scalia. But I am happy to say in England, over the course of my professional career, we have learnt better. We know now that we do not have a monopoly of wisdom - on the contrary, we know full well now that we can learn from others, just as we hope that others can learn from us, and by a collaborative approach to legal problems, hopefully we can all learn and do better in the future. So, as I say, my advice is don't be parochial, don't be insular, don't think that your own system is always right - on the contrary, look and see what other systems of law have to say. We all face common problems, and by looking and seeing how other people have solved the problems, we can all learn to do better.

SIPLR: Thank you for taking the time to speak with us, Lord Justice Arnold!



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Copyright protection for public artworks in a digitalised world – a case study

By Carla Zachariasson and Anna Li

ABSTRACT

The growing digital landscape indeed imposes new questions and challenges for legislators and courts when adopting and adapting intellectual property law. For example, when artworks located in public outdoor spaces are published online (without the right holder's consent), a reasonable balance between intellectual property protection and other interests, such as the free use of the internet, should be ensured.

In 2016 and 2017, the Swedish courts delivered two judgments regarding the scope of protection for copyright-protected public artworks published online in the form of photographs. The purpose of this article is to discuss these judgments in light of the fact that on the one hand, the copyright holder has the exclusive right to communicate the work to the public, and on the other hand, that people may use the internet to spread information freely.

1. INTRODUCTORY REMARKS

With the almost explosive growth of digitalisation, the safeguarding of copyright-protected works continuously faces new questions and challenges. In 2016 and 2017 respectively, the Swedish Supreme Court (the "**Supreme Court**") and the Swedish Patent and Market Court, a specialised intellectual property division of the Stockholm District Court (the "**Court**"), each delivered a judgment regarding the scope of protection for copyright-protected artworks published online in the form of photographs.[1] In short, the two cases regarded Wikimedia Sweden ("**Wikimedia**"), which provided links to a third party-database ("**Wikimedia Commons**"). On this database, private individuals had, without the consent of the copyright holders, published photographs of copyright-protected artworks located on public outdoor spaces, such as public squares, roundabouts, parks, etc.

The Supreme Court's judgment is of interest as it, *inter alia*, balances the copyright holder's exclusive right to communicate the copyright-protected work to the public against the freedom of panorama, i.e. the right to reproduce artworks which are permanently located outdoors on public spaces. Further, the Court's judgment is of interest from a European Union perspective, as it deals with concepts such as "communication to the public" within the meaning of Article 3(1) of the 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* (the "**Directive**"), commonly known as the InfoSoc Directive.

The purpose of this article is to discuss the Supreme Court's and the Court's judgments in light of, on the one hand, the fact that we live in a digitalised world where millions of people can spread information on the internet and, on the other, the copyright holder's exclusive right to communicate the work to the public. For this purpose, the concept of freedom of panorama and the case law of the Court of Justice of the European Union (the "**CJEU**") on communication to a "new public" within the meaning of Article 3(1) of the Directive is of great relevance.

The article is structured as follows. First, the article provides a general overview of the legal framework for a copyright holder's exclusive right to communicate the work to the public and the freedom of panorama under the Directive and the Swedish Copyright Act (the "**Act**"). Thereafter, the Supreme Court's and the Court's judgments are presented chronologically. For the reader's information, the Supreme Court's judgment was delivered before the Court's judgment, as it concerned two specific questions referred from the Court. Lastly, the article is summarised with some concluding remarks.

2 THE LEGAL FRAMEWORK

2.1 The InfoSoc Directive

The Directive was enacted to create a harmonised legal framework for copyright and related rights through increased legal certainty and a high level of protection of intellectual property.[2] Without such harmonisation, it was feared that in order to respond to the technological challenges, the Member States' legislative activities might lead to significant differences in protection and thereby lead to restrictions on the free movement of services and products related to intellectual property.[3] This could, in turn, result in a defragmentation of the internal market and legislative inconsistency.[4]

Articles 2 – 4 of the Directive set out certain exclusive rights for the copyright holders. Article 2 stipulates a reproduction right, i.e. an exclusive right for the copyright holder to produce copies of the copyright-protected work. Article 3 confers a right for the copyright holder to communicate the work to the public as well as a right to make the work available to the public and Article 4 stipulates a right to distribute the work to the public by sale or otherwise.

Article 5 of the Directive contains an exhaustive list of permissible exceptions and limitations of the exclusive rights in Articles 2 – 4. As the Directive provides the overall framework for permissible exceptions and limitations, the EU Member States may not allow any other exceptions or limitations in their respective national regulations that go beyond what is permitted according to Article 5 of the Directive.[5] One such exception is the freedom of panorama, which is presented in further detail below under chapter 2.3.

2.2 The Swedish Copyright Act

In Sweden, copyright protection is mainly regulated by the Act. Similar to the Directive's Articles 2 – 4, the protection includes certain exclusive rights for the copyright holder to exploit the work (Sw. *förfoganderätt*), including a right to make copies of the work (*Sw. mångfaldiganderätt*) as well as to make the work available to the public (Sw. *tillgängliggörande för allmänheten*).[6] These are generally referred to as the copyright holder's economic rights. The copyright holder also has a number of moral rights such as the right to be named in connection with the use of the work as well as the right to oppose any changes to the work. However, in the context of this article, the economic rights are the most relevant.

Chapter 1, Article 2, Paragraph 3 of the Act lists different ways in which copyright- protected works are "made available to the public". One such way is communicating the work to the public (Sw. *överföring till allmänheten*), which includes making the work available to the public by wire or wirelessly from a place other than where the public may normally access the work.[7] This provision also includes communications that occur in such a way that individuals may access the work from a place and time of their own choosing.

2.3 The freedom of panorama

The freedom of panorama is a copyright exception which allows private individuals, by taking photographs, filming videos, or making drawings, etc. to create images of artworks that are permanently situated in public places and to use such images without the consent of the copyright holder.[8]

As mentioned above under chapter 2.1, Article 5 of the Directive allows for certain exceptions and limitations to the copyright holder's exclusive rights. One such exception is the freedom of panorama in Article 5(3)(h), which stipulates that Member States *may* provide exceptions or limitations to the copyright holder's exclusive rights to artworks, such as architectural works or sculptures, made to be permanently located in public places. This provision is discretionary, meaning that each Member State may decide whether to include such a provision in the national law of the Member State.[9] Although the Directive, as mentioned above, provides the overall framework for permissible exceptions and limitations, the concept of freedom of panorama is not further harmonized within the EU. Thus, the Directive's broad formulation of the freedom of panorama has resulted in different approaches of the concept in different EU Member States.[10]

1 The Supreme Court's judgment NJA 2016 p. 212 and the Court's case no. PMT 8448-14.
2 The Directive's preamble recital 4.
3 The Directive's preamble recital 6.
4 The Directive's preamble recital 6.
5 Government Bill 2004/05:110 p. 46.
6 See Chapter 1, Section 2, Paragraph 1 of the Act.
7 Chapter 1, Section 2, Paragraph 3, Item 1 of the Act.
8 Shtefan, Anna, 'Freedom of panorama: the EU experience', European Journal of Legal Studies, 2019, Vol. 11, No. 2, p. 14.
9 Government Bill 2004/05:110 p. 46.
10 Shtefan, Anna, 'Freedom of panorama: the EU experience', European Journal of Legal Studies, 2019, Vol. 11, No. 2, p. 17.

In Sweden, the concept of freedom of panorama manifested in law a century ago, although with a different formulation than the current provision.[11] The exception rule was motivated by the fact that artworks, which have been situated on certain public locations, have become a part of the cityscapes or landscapes and thus in a sense these artworks have become public property.[12] Accordingly, each and everyone should have the right to freely reproduce such artworks. The provision has been revised a number of times and the latest revision was carried out in connection with the implementation of the Directive in Sweden, particularly Article 5(3)(h) of the Directive. Today, the freedom of panorama is expressed in Chapter 2, Section 24, Paragraph 1, Item 1 of the Act and is formulated as follows (authors' translation):

> *"Artworks may be reproduced*
> *1. if they are permanently situated on or at a public outdoor location."*

The freedom of panorama under the Act thus constitutes an exception from the copyright holder's exclusive right as it allows the public to reproduce artworks, e.g. by taking photographs, filming videos, creating drawings, etc. and to use the reproduction without the copyright holder's consent. It should be noted that freedom of panorama only applies to artworks that are located outdoors and in a public location such as, e.g. a market place, a roundabout, a street or a park.[13] Thus, the exception is not applicable to artworks that are only temporarily located in public locations, for example, artworks which are part of a temporary exhibition.[14]

Furthermore, the freedom of panorama only applies to two-dimensioned reproduction, for example reproduction through drawings, paintings or photographs, and does not include any three-dimensioned reproduction such as sculptures.[15] In addition, the meaning of the concept "reproduce" (Sw. *avbilda*) has been subject to discussions and different interpretations.[16] In fact, the interpretation of "reproduce" under Chapter 2, Section 24, Paragraph 1, Item 1 of the Act became the fundamental question in the Supreme Court's judgment NJA 2016 p. 212. Against this background, the article moves on to discuss the Supreme Court's judgment.

3 THE SUPREME COURT'S JUDGMENT NJA 2016 P. 212

3.1 Background

The facts of the case can be summarised as follows. Wikimedia is a non-profit association which provides, *inter alia*, the website "offentligkonst.se". The website contained links to a third party-database, Wikimedia Commons, to which individuals could upload photographs of artworks placed outdoors in different public spaces around Sweden. The purpose of the database, which was open to everyone and free of charge, was to provide an open and easily accessible database for public art in Sweden and was intended to be used by the public, including the education system and the tourist industry.

Bildupphovsrätt i Sverige ek. för. (**"BUS"**) is an organisation that mainly represents copyright holders to visual art in Sweden. BUS also collects license fees as well as distributes the royalties obtained by contract licences.

On behalf of the three copyright holders mentioned below, BUS commenced proceedings against Wikimedia for infringing these artists' exclusive rights to communicate their artworks to the public: the artwork "Duo", by Thomas Qvarsebo (1988), the sculpture "Moby Dick" by Johan Paalzow (2004) and the artwork "Binär" by Eva Hild (2012). All three sculptures were permanently located outdoors at public locations in Stockholm.

Wikimedia disputed the claims and asserted that the freedom of panorama under the Act was applicable. According to Wikimedia, the scope of the freedom of panorama under the Act should not be subject to a narrower interpretation than the corresponding provision in the Directive.

As the case involved certain legal questions that had not been previously clarified by the Supreme Court, the court decided to refer the following questions to the Supreme Court before adjudicating the case in its entirety:

- Should *"reproduce"* as stipulated in Section 24, Paragraph 1 of the Act be interpreted as to allow artworks that are permanently located in public outdoor locations-, to be freely transferred to the public via the internet and without needing to obtain any consent or making any payments to the copyright holder?
- Is the answer to the abovementioned question dependent on whether the transfer was made with a commercial purpose or not?

3.2 The relation between the Directive and the Act and the "three-step-rule"

In its judgment, the Supreme Court first presented the legal framework of copyright protection step by step, including the relevant provisions in the Act.

The Supreme Court noted that the preparatory works to the Act emphasise that the copyright holder's exclusive rights are property rights and consequently that restrictiveness shall be observed when allowing any exceptions or limitations of such rights. Further, the Supreme Court referred to its previous case law which concludes that the courts have a very limited scope to interpret other limitations of the exclusive rights than those that are explicitly mentioned by law.[17]

Furthermore, the Supreme Court pointed out that the Act shall be interpreted in light of the Directive. The Supreme Court held that the Directive provides a strong protection for copyright, especially in the digital environment. Further, the Supreme Court noted that the Directive aims to balance the copyright holder's protection, on the one hand, and certain public interests in relation to using the work, on the other.

As mentioned above, Article 5 of the Directive contains an exhaustive list of the permissible exceptions and limitations of the rights that are regulated in the Directive. The Supreme Court noted that Article 5(5) of the Directive expresses the so-called "three-step-rule" according to the following:

> *1. An exception or limitation must relate to the specific case, i.e. the infringement must be clear and precise.*
> *2. An exception or limitation may not be applied in a way which conflicts with the normal exploitation of the copyright holder's work. According to the Supreme Court, this step not only includes any current use; it also includes the copyright holder's right to exploit the work in new ways due to technical developments.*
> *3. The exception or limitation may not unreasonably prejudice the copyright holder's legitimate interests. This rule requires a proportionality assessment of whether the exception or limitation of the copyright holder's exclusive right can be motivated by a stronger public interest.*

According to the Supreme Court, the "three-step-rule" should be considered as an instruction for a court's interpretation of exceptions and limitations to a copyright holder's exclusive rights.

3.3 The Supreme Court on the freedom of panorama

Regarding the relevant exception rule in this case, i.e. the freedom of panorama, the Supreme Court held that this exception is based on the public interest of freely reproducing cityscapes or landscapes without encountering any obstacles based on any exclusive rights related to copyright-protected work.

Further, the Supreme Court stated that, for practical reasons and due to the small economic significance for copyright holders, reproduction is permitted even when the artwork is the main motive for the reproduction, e.g. on a postcard. The Supreme Court noted that the Swedish regulation on freedom of panorama differs from the other Nordic countries' regulations, which do not allow for reproductions when the artwork is the main motive. The Swedish legislator has considered the issue of whether the Swedish legislation should be made more restrictive in this regard. However, as the Supreme Court noted, no such legislative reforms had yet been implemented.

In conjunction with the latest reform of Section 24 of the Act the legislator stated that the Directive provides the overall framework for permissible limitations under national law. As the concept of reproduction under the Act only applies to two-dimensional reproduction, the exception under Swedish law is more limited than the exceptions in Article 5 of the Directive. Therefore, the legislator concluded that no changes were necessary.

3.4 The Supreme Court's interpretation of "reproduce" under the Act

Against this background, the Supreme Court went on to determine how "reproduce" in Chapter 2, Section 24, Paragraph 1, Item 1 of the Act should be interpreted. The Supreme Court pointed out that the Act has been reviewed on several occasions without such reviews leading to any law reforms.

The Supreme Court held that the assessment of which limitations fall under the scope of "reproduction" should be made in accordance with the "three-step-rule". As regards the first step of the rule in this particular case, the Supreme Court pointed out that the assessment of what constitutes a "normal use" should only relate to the "normal use" of an artwork located at a public space. According to the Supreme Court, the aforesaid question also included an assessment of what type of exclusive right the copyright holder should have to economically exploit the work, i.e. the second step of the "three-step-rule".

Going back to the aforementioned exception for reproductions on postcards, the Supreme Court stated that the exception was not relevant in this case as it was formulated for practical reasons at a time when such reproductions were produced and distributed in a relatively limited number. The Supreme Court stated that *it was different when the artwork was used in a digital environment*.

In this case, the artworks were made available to the public by Wikimedia through links to an open third-party database. The Supreme Court affirmed that typically the commercial value of such use of copyright-protected work is not insignificant to the owner of the database, or to the

[11] See Article 7 of the Cultivated Artwork Act of 1919 (the "CAA") and the Swedish Government Official Reports, reports by Government commission of inquiry 1956:25 p. 263.
[12] Swedish Government Official Reports, reports by Government commission of inquiry 1956:25 p. 263-264.
[13] Olsson, Rosén, Upphovsrättslagstiftningen – En kommentar, 2016, Norstedts Juridik, p. 202.
[14] Olsson, Rosén, Upphovsrättslagstiftningen – En kommentar, 2016, Norstedts Juridik, p. 202.
[15] Government Bill 2004/05:110 p. 224.
[16] See Swedish Government Official Reports, reports by Government commission of inquiry 2011:32 p.171-172.
[17] See NJA 1986 p. 702 and NJA 1993 p. 263.

person that provides access to the database, e.g. by linking. The Supreme Court held that such economic value should be reserved to the copyright holder. The Supreme Court also concluded that whether the provider of the database has a commercial purpose or not is irrelevant in this context.

After having arrived at the aforementioned conclusion, the Supreme Court continued with the last step of the "three-step-rule" which, in this case, was whether Wikimedia's linking to the database unreasonably prejudiced the copyright holder's legitimate interests. The Supreme Court emphasised that the exception for the freedom of panorama should be interpreted restrictively, and that the purpose of the database must be considered.

The Supreme Court stated that although the purpose of the database, i.e. to provide an open and easily accessible database for public art in Sweden, fell within the scope of a public interest, a database of this type did in fact provide for a wide use of copyright-protected works, without paying any compensation to the copyright holders. Accordingly, it led to a significantly larger limitation of the copyright holders' exclusive rights than the provision allows. The Supreme Court held that the right to exploit artwork in this way was, *with the current formulation of the provision*, still in the possession of the copyright holder.

Thus, the Supreme Court's answer to the referred question from the Court was that the freedom of panorama under Chapter 2, Section 24, Paragraph 1, Item 1 of the Act did not give Wikimedia the right to transfer the works via internet to the public through the linking to Wikimedia Common's database. Moreover, whether the provider of the database had a commercial purpose or not was deemed irrelevant in this context.

3.5 Concluding remarks regarding the Supreme Court's judgment

The aforesaid judgment by the Supreme Court involves several interesting aspects. Firstly, the Supreme Court clarified the method for the court's assessment regarding the interpretation of any limitations of the copyright holder's exclusive rights pursuant to the Directive. The Supreme Court laid down that the courts should observe the so-called "three-step-rule" stipulated in Article 5(5) of the Directive when they interpret the limitations. In addition, each step of the aforesaid rule was described in detail in the judgment.

Secondly, the Supreme Court was faced with the question of the copyright holder's rights in relation to the new technical environment and development. This was particularly clear when the Supreme Court compared the exemption rule related to the distribution of postcards and deemed it to be irrelevant for present purposes. According to the Supreme Court, the exemption rule related to postcards was enacted due to practical reasons and at a time when it was a question of producing and distributing a relatively limited amount of analogue reproductions. The situation was *different* when the artwork was used in a digital environment. Thus, the Supreme Court took into account the digital environment and the effect thereof including the fact that an extensive amount of reproductions of artworks could be produced and distributed on the internet.

Lastly, and perhaps the most interesting aspect of this judgment, is that the judgment can provide further guidance in relation to the interpretation of the freedom of panorama exception set out in Chapter 2, Section 24, Paragraph 1, Item 1 of the Act, particularly regarding the interpretation of "reproduce". As mentioned above, the Supreme Court held that the "three-step-rule" should be observed by the courts when interpreting limitations of the exclusive rights. This rule was also applied by the Supreme Court in the present case and formed the basis of its assessment.

The Supreme Court's statement in regards to the economic exploitation of copyright-protected works may, since Wikimedia is a non-profit organisation, be interpreted so that an objective assessment should be made in this regard. It is also deemed sufficient that such use only has a commercial value for a third party (that in one way or another contributes to providing access to the database) and not for the owner itself.

In the Supreme Court's conclusion, it was stressed that according to the *current* formulation of the provision, the right to exploit artwork through the use of new technology was still within the copyright holder's possession. This statement may be interpreted as implying that the outcome may have been different if the provision had been amended and thus had a different formulation. It may be noted that the Supreme Court also emphasised in its judgment that although the meaning of the concept of "reproduce" had been the subject of discussion, *inter alia*, in connection with the latest revision of the Act, no legislative reforms had yet been implemented.

Nevertheless, the aforesaid judgement has been the subject of discussion and the legal reasoning of the Supreme Court has been criticized by some legal scholars.[18] Further, the judgment and its consequences have been discussed among politicians and the general public. Hence, the judgment has led to a legislative proposal in Sweden which includes a proposal for making the aforesaid provision technically neutral and thus allowing pictures of public artworks to be freely shared on the internet.[19] However, the legislative proposal has been rejected.[20] In this context it may also be noted that the European Commission's proposal for a Directive on copyright in the Digital Single Market does not include any provisions related to the panorama exception.[21] Accordingly, no further harmonization of the concept in relation to the digital environment is likely to be expected in the near future at European level. Moreover, BUS has also expressed its own interpretation of the Supreme Court's judgment in an article published in a local newspaper.[22] According to BUS's interpretation, the judgment only applies to databases such as Wikimedia's database and does not limit private individuals' rights to upload photos of artworks on social media in general.[23] The latter question is one of the questions the Court dealt with in its case no. PMT 8448-14. This case will be further described in the following section.

4 THE COURT'S CASE NO. PMT 8448-14

4.1 Background

After the Supreme Court's ruling in NJA 2016 s. 212, the dispute between BUS and Wikimedia was subject to new proceedings in the Court.

In these proceedings, BUS contended that the Court should prohibit Wikimedia under penalty of a fine from communicating the artworks to the public for the remainder of the artworks' copyright protection period. Further, BUS demanded that the Court should declare that Wikimedia was obliged to pay fair compensation (Sw. skälig ersättning) for the use of the artworks as well as damages for the additional loss pertaining to the infringement (Sw. *den ytterligare skada som intrånget har medfört*).

Wikimedia disputed the requests for relief on the basis that, although the artworks could be accessed via the links on Wikimedia's website, the works had not been communicated to a *new public* as the artworks could be accessed on the artists' own websites (we will return to the term "new public" below). Further, Wikimedia argued that the artists had given their implied consent to the use of the artworks by publishing them on the internet. Lastly, Wikimedia asserted that, in any case, Wikimedia had not acted with intent or gross negligence and could thus not be required to pay compensation or damages to BUS. Wikimedia also disputed the contention that BUS had suffered damage as a result of Wikimedia's actions.

Against this background, the fundamental issue in this case was whether Wikimedia, by providing links to Wikimedia Commons, where pictures of the artworks had been published without the artists' consent, constituted a communication of the works to the public as set out in Chapter 1, Section 2, Paragraph 3, Item 1 of the Act and in Article 3(1) of the Directive.

4.2 Communication to a "new public" within the meaning of Article 3(1) of the Directive

The Court noted that in order to establish whether linking on the internet to a copyright-protected work constitutes a communication to the public, the CJEU has introduced the term *new public* (Sw. *ny allmänhet or ny publik*). In case C-466/12 (**"Svensson"**), the CJEU stated that a communication falls within the meaning of Article 3(1) of the Directive if the communication concerns the *same works* as those covered by the copyright holder's communication (**"the initial communication"**) and is made with the *same technical means* as the initial communication. Further, the communication must be directed at a new public, i.e. *a public which was not taken into account by the copyright holder when he or she authorised the initial communication to the public*.

With reference to the case of Svensson, Wikimedia argued that the artworks had not been communicated to a new public, as Wikimedia's website visitors could access the same artworks on the artists' respective websites. Wikimedia asserted that the visitors to their website were included in the "internet population" which must have been taken into account by the artists in their initial communication.

BUS on the other hand argued that a copyright holder's exclusive right to communicate a work to the public could not reasonably be lost merely because the work has been made available on a website with the consent of the copyright holder. According to BUS, this would be a far-reaching restriction of the copyright holder's exclusive rights with no support in the CJEU's case law.

The Court noted that the facts of the case were different from those in Svensson. The latter concerned a website which linked to another website where copyright-protected works had been published with the consent of the copyright holder, and thus did not constitute a communication to a new public. However, in the present case, Wikimedia's website linked to a database on a website where the artworks had been published without the consent of the artists. Consequently, the principles outlined in Svensson could not be applied to this case.

[18] See, for example, the article written by Björkenfeldt, 'Offentlig konst mindre offentlig. Kommentar till Högsta domstolens beslut den 4 april 2016' (NJA 2016 s. 212), Nordiskt immateriellt rättsskydd, 2016, Vol. 3 p. 310-324.

[19] See the Private Member's Motion to Riksdagen 2018/19:2544, Panoramafrihet, submitted by Rickard Nordin (C) and Peter Helander (C) p.1.

[20] See further in the committee report 2018/19:NU16 by the Committee on Industry and Trade, Skydd för beteckningar som omfattas av EU:s handelsavtal med Japan, p.12-13 and p. 20-21.

[21] See COM(2016) 593 final, Proposal for a Directive of the European Parliament and of the Council on copyright in the Digital Single Market, 14 September 2016, Brussels.

[22] Lindberg, M., Fortsätt att fota Poseidon i Göteborg, Borås Tidning, 30 April 2016, available on the following website: https://www.bt.se/insandare/fortsatt-att-fota-poseidon-i-goteborg/ (last visited on: 27 March 2020).

[23] Lindberg, M., Fortsätt att fota Poseidon i Göteborg, Borås Tidning, 30 April 2016, available on the following website: https://www.bt.se/insandare/fortsatt-att-fota-poseidon-i-goteborg/ (last visited on: 27 March 2020).

Instead, the Court referred to case C-160/15 (**"GS Media"**), in which the CJEU emphasised the significance of obtaining the copyright holder's consent for communicating copyright-protected work, as Article 3(1) of the Directive prescribes that any communication to the public requires such consent.

On this basis, the Court concluded that Wikimedia's linking to Wikimedia Commons' database could in fact constitute a communication to the public within the meaning of Article 3(1) of the Directive and Chapter 1, Section 2 of the Act. The fact that the artworks were available on the artists' own websites did not alter this conclusion.

4.3 Back to the question of freedom of panorama

The Court then addressed Wikimedia's contention that the publications of the artworks on Wikimedia Commons' website were lawful reproductions under the freedom of panorama and that consequently Wikimedia's linking to such publications were lawful.

Wikimedia argued that the photographs on Wikimedia Commons' website had been lawfully published by private individuals, with reference to the freedom of panorama in Chapter 2, Section 24, Paragraph 1, Item 1 of the Act. According to Wikimedia, the Supreme Court's ruling in NJA 2016 p. 212 did not apply to private individuals who publish pictures of artworks on Wikimedia Commons.

However, the Court stated that the freedom of panorama only applies to, e.g. photographs, paintings, etc. but not reproductions in three-dimensional or other plastic form nor publishing a picture of a copyright-protected work on the internet. As such, the Court held that a publication of copyright-protected work on the internet cannot be deemed as anything other than a communication to the public which requires the consent of the copyright holder. Since consent from the copyright holder had not been obtained for the photographs of the artworks published on Wikimedia Commons, Wikimedia's linking to such photos was not lawful under the Act.

4.4 The relevance of financial purpose and/or bad faith

In order to determine whether Wikimedia's linking activities constituted a communication to the public, the Court again referred to the case of GS Media. According to this case, linking to copyright-protected works, which are freely available on another website *without* the consent of the copyright holder, does generally not constitute a communication to the public provided such links are provided *without the pursuit of financial gain* by a person *who did not know* or could not reasonably have known the illegal nature of the publication. On the contrary, if links are provided for such purpose, knowledge of the illegal nature is presumed.

As it was undisputed that Wikimedia, in its capacity as a non-profit association, did not act with the pursuit of financial gain, the Court went on to determine whether Wikimedia knew or should have known that the links on their website gave visitors access to unlawful publications of copyright-protected artworks. In this regard, the Court noted that Wikimedia had received a letter from BUS on 19 December 2013, in which BUS alleged that Wikimedia had committed copyright infringement. Accordingly, the Court asserted that Wikimedia had been aware of the illegal nature of their linking since at least 19 December 2013.

Consequently, Wikimedia's linking to Wikimedia Commons' database constituted a communication to the public within the meaning of Article 3(1) of the Directive and Chapter 1, Section 2 of the Act. As a final question, the Court assessed Wikimedia's claim that the artists had given their consent to communicate the artworks to the public.

4.5 Implied consent?

Wikimedia asserted that the artists, by publishing the artworks on their own websites, had given their implied consent for others to publish the artworks on other websites. Under such circumstances, the copyright holder must have considered and consented to a widespread dissemination of the works on the internet. Further, Wikimedia stated that when copyright-protected work has already been published on the copyright holder's website, there is no practical or economic significance for the copyright holder as to whether a third party links to the same work on another website.

The Court stated that the copyright to a work, from the point of creation, belongs to the copyright holder, and that such copyright can only be granted to a third party by express or implied consent. Unclear or "tacit" agreements are to be interpreted to the beneficially for the copyright holder's . According to the Court, the fact that the artists had published the artworks on their own websites could not constitute an implied consent for Wikimedia, without limitation, to link to the artworks on other websites. Further, the Court noted that there was no evidence which demonstrated that Wikimedia had initiated any contact with the artists or BUS since the launch of Wikimedia's website in 2012. Further, as mentioned above, BUS had contacted Wikimedia in December 2013 without Wikimedia taking any action. Thus, the Court concluded that the artists had not even implicitly consented to Wikimedia's linking.

In conclusion, as Wikimedia had communicated the artworks to the public without the express or implied consent of the artists, Wikimedia had infringed the artists' copyright.

4.6 Concluding remarks on the Court's judgment

With the Court's judgment in mind, it seems that the Court did not base its conclusion of copyright infringement on an assessment of whether the artworks had been communicated to a "new public" (at least not expressly). The lack of discussion around the "new public" issue can perhaps be explained by the difficulties associated with determining whether a communication has occurred to a "new public" when, prior to the communication in question, the copyright-protected work has already been published on the internet by the copyright holder.

For example, when an artwork is permanently placed in a public square, the artwork's public is more or less distinct, namely anyone who visits the public square. Thus, if someone other than the copyright holder photographs the artwork and publishes it on the internet, is it quite clear that the artwork has been communicated to a "new public" in such a way that the copyright holder's exclusive right has been infringed (see further below).

However, when the copyright holder has published a photograph of the artwork online, the question of a "new public" becomes a bit more problematic to determine. As everyone who has access to the internet may in fact visit the copyright holder's website, it is difficult to limit the public to any other public than the entire internet population. In this regard, one may ask if it is possible to communicate the work to a "new public" after the initial communication by the copyright holder.

Against this background, it may be argued that the question of whether a communication has been made to a "new public" is irrelevant in situations where copyright-protected works have been published online by the copyright holder. This might be why the Court, instead of discussing the "new public" issue, emphasised the importance of obtaining the copyright holder's consent (with reference to the CJEU's case law). By this argumentation, the artists' copyright to the artworks could be protected even though the "new public" argument was not clearly applicable.

Lastly, one may ask what the practical consequences of this case may be, especially in light of the Directive and the CJEU's case law. First of all, it should be noted that the Court's case has a limited value as a precedent and should thus not lead to any far-reaching conclusions since it is a decision from the first court instance. With this being said and considering the incalculable reach of the internet today with interconnected websites, it may in many cases be difficult or even impossible to identify the copyright holder and to obtain his or her consent. Consequently, private individuals and legal entities would be in breach of copyright more or less on a daily basis, e.g. when posting pictures of artworks on social media such as Facebook, Instagram and other digital platforms. Therefore, the CJEU's decision in GS Media is of great relevance. As mentioned above, the case allows communications without the copyright holder's consent if: (i) the communication is provided without the pursuit of financial gain; (ii) by a person who did not know or could not reasonably have known the illegal nature of the publication. Accordingly, private individuals and other actors on the internet are not prohibited from posting pictures of copyright protected works online always provided that the economic value related to the work is reserved to the copyright holder. Thus, the decision in GS Media could be said to serve as an outlet for the free use of the internet in a way that accords with the copyright holder's exclusive rights.

5 SUMMARY

The purpose of this article has been to discuss the Supreme Court's and the Court's judgments in light of, on the one hand, the expansive growth of digitalisation and, on the other, the copyright holder's exclusive right to communicate the work to the public, the freedom of panorama exception set out in Chapter 2, Section 24, Paragraph 1, Item 1 of the Act, and the term communication to a "new public" according to the CJEU's case law related to Article 3(1) of the Directive.

In the Supreme Court's judgment, the copyright holder's exclusive right to communicate the work to the public took precedence over the freedom of panorama, as the provision of the database in question led to a significantly larger limitation of the copyright holders' exclusive rights than is permissible under the Act.

The Court's judgment demonstrates the difficulties associated with determining whether a communication has been made to a "new public" when the copyright holder has already published the copyright-protected work online, as millions of people today have access to the internet.

To summarise, the Supreme Court's and the Court's judgments are clear examples of how the application of intellectual property law continuously needs to be adjusted and adapted as the digitalisation continues to expand rapidly. In light of the fact that digitalisation will undoubtedly continue to grow, legislators and courts will face new questions and challenges when adopting and adapting intellectual property law to ensure a reasonable balance between the copyright holder's exclusive rights and the free use of the internet.

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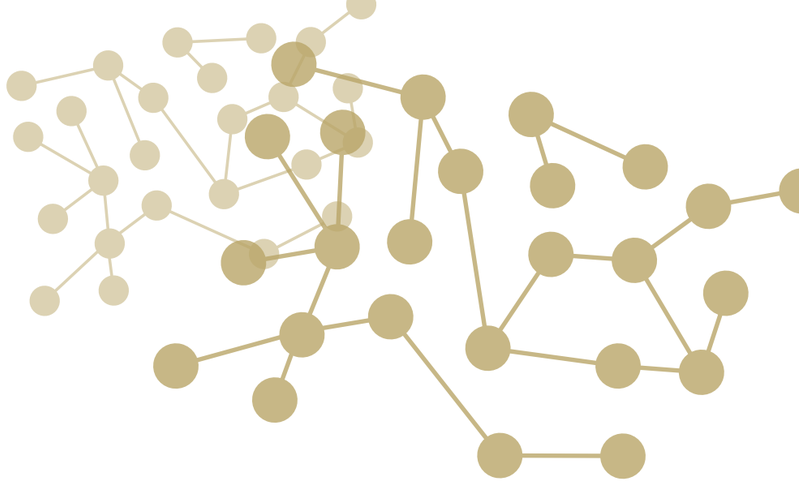
Some similarity but not a minimum degree of similarity?: Are narrowly defined levels of abstraction in the similarity of goods-test contrary to EU trade mark law policy?[1]

By Gustav Gierlöff



ABSTRACT

A minimum degree of similarity among goods (and services) is required for a global appreciation of likelihood of confusion to be carried out under EU trade mark law. The CJEU clarified already back in the 1990's what factors could be relevant when the similarity-test is carried out, but has never really further elaborated on the similarity-test. The assessment of whether similarity is present is dependent on the preceding assessments of how similar the goods must be for them to be deemed similar at a minimum degree. The article argues that trade mark law policy requires that such preceding assessments must take into account such circumstances which the relevant public may come to rely upon, when making up their mind as to whether the goods come from the same commercial origin. Origin confusion considerations may therefore play an important role already at the stage of the likelihood of confusion-test when the similarity of goods-test is carried out.

1. INTRODUCTION

The two essential components of a trade mark registration are the representation of the trade mark and the list of the goods covered by the registration. Together they determine the basis for the scope of protection of a trade mark.[2] The fact that the trade mark rights conferred upon the trade mark proprietor are limited to the registered goods is usually referred to as the *principle of speciality*. The principle seeks to reconcile the rights conferred by a trade mark with the principle of free movement of goods.[3] It requires that the rights conferred by the trade mark are defined with precision in order to limit those rights to the actual function of a trade mark.[4] The principle has therefore been described as a corollary to the trade mark's essential function of guaranteeing the commercial origin of goods bearing the trade mark.[5] Under the principle, any third party may use an identical mark for goods that fall outside the scope of protection defined by the trade mark registration. However, a stringent application of the principle would mean that the scope of protection of a trade mark would be limited to only goods identical to those described in the registration. While that is clearly not the case under the enhanced protection for reputed marks, where the principle has clearly been abandoned, the principle's effect has also been limited under the likelihood of confusion provisions. This is evident by the fact that the scope of protection under the likelihood of confusion provisions extends also to similar goods.[6] However, invoking the protection against likelihood of confusion is precluded if the goods are deemed to be dissimilar, as a global appreciation of likelihood of confusion is not to be carried out in those cases.[7]

To most people familiar with trade mark law and its history, an inclusion of also similar goods under the confusion provisions may be taken as a given. However, little attention seems to have been given towards why that is. The reason why the confusion provisions cover similar signs, and not just identical signs, is arguably more straight forward. For example, the average consumer is deemed to have an imperfect recollection of signs, and the trade mark proprietor has no possibility in practice to register all conceivable relevant variations of a sign, to properly protect the origin function of their specific mark. However, a party applying for a trade mark registration can, to a greater extent, freely choose among the goods for which protection is desired. Still, the CJEU has asserted that it is common ground that the trade mark proprietor's exclusive rights extends also beyond the registered goods, as a risk of origin confusion may arise also from the use of an identical sign affixed to goods different than those listed in the trade mark registration.[8] The statement of the CJEU indicates that the reason for why the confusion protection extends to also similar goods is because it is necessary for the origin function of a trade mark to be properly protected. This is consistent with earlier national trade mark law in some EU Member States, such as Germany and Sweden, where protection against likelihood of confusion extended to similar goods, based on the underlying interest of protecting the origin function.[9] This is also in line with arguments presented in the old well-known article *The Rational Basis of Trademark Protection* from 1927, by Frank I Schechter, through which the concept of dilution first gained widespread attention.[10] Already in that article Schechter claimed that in order to protect the primary function of a trade mark, its distinctiveness, it may be necessary to protect a mark also for "*related*" goods.[11] This indicates that while the principle of speciality serves to balance trade mark rights with the principle of free movement of goods, by limiting the scope of protection to the registered goods, a stricter application of the principle is unacceptable if the origin function is to be properly protected. The trade mark proprietor's rights has to prevail to the extent that the origin function is not jeopardised also when a mark is used for goods that are similar enough to risk causing origin confusion. Origin confusion considerations have consequently come to affect the scope of protection and the application of the principle of speciality, to the extent that also similar goods are considered relevant under the protection against likelihood of confusion. However, this raises the question whether origin confusion considerations also have come to affect the similarity assessment itself.

The similarity of goods test is carried out through the perception of the average consumer.[12] Therefore, once it has been established what type of goods a registration covers, the relevant public and the average consumer in relation to those goods has to be defined. This is followed by the question whether the average consumer considers the goods to be identical, similar or dissimilar.[13] While all types of goods belong to a class of goods under the Nice Classification System, the system is used for administrative purposes only and the mere fact that two types of goods can be found in the same or different classes is never decisive for the similarity assessment.[14] The classes often contain a large variety of goods which are not necessarily sufficiently interlinked in a relevant way.[15] As the legislation does not provide any guidance as to what factors are relevant when assessing similarity, the request for a preliminary ruling to the CJEU in *Canon*[16] gave the CJEU the opportunity to elaborate on the test. The CJEU held that the comparison of goods should be made by taking all the relevant factors related to the goods into account. Those factors were held to include, inter alia, their nature, their intended purpose, their method of use and whether they are in competition with each other or are complementary.[17] The CJEU seems to have found inspiration for the factors listed in Canon from the prevailing test for goods similarity in the UK *British Sugar* case and the factors argued before the court by the UK and France.[18] The CJEU however never further elaborated on why those factors are relevant ones, whether they all have some underlying common rationale, and more specifically, they never explained why those factors would be relevant to an average consumer.

1 The article is based on the 2020 Lewis Gaze Memorial Scholarship awarded thesis Origin confusion considerations in the similarity of goods-test.
2 AG's opinion C-307/10 *IP Translator* para 52.
3 Ibid. para 56.
4 Ibid. para 56.
5 AG's opinion C-418/02 Praktiker para 47.
6 EUTMR Art. 8.1b, Art. 9.2b; Art. 8.5, Art. 9.2c; AG's opinion C-252/07 *Intel* para 8-13.
7 CJEU C-234/06 *P Bainbridge* para 48; CJEU C-106/03 P *Vedial* para 51: CJEU C-142/14 P *Sunrider II* para 108; CJEU C-224/17 P *Hermandez Zamora* para 7-8.
8 CJEU C-9/93 *IHT* para 16.
9 Wessman, Richard, Varumärkeskonflikter: Förväxlingsrisk och anseendeskydd i varumärkesrätten, Norstedts Juridik, 1 ed., 2002 [cit. Wessman] p. 31-32, 222.
10 Fhima, Ilanah, Trade Mark Dilution in Europe and the United States, Oxford University Press, 1 ed., 2011 [cit. Fhima (2011)] p. 4.
11 Ibid. p. 5.
12 Muyldermans, Paul & Maeyaert, Jeroen, Likelihood of Confusion in Trade Mark Law: A Practical Guide to the Case-law of EU Courts, Wolters Kluwer, 1 ed., 2019 [cit. Muyldermans & Maeyaert] p. 98.
13 Muyldermans & Maeyaert p. 98.
14 EUTMR Art. 33(7).
15 CJEU C-597 Isdin para 27.
16 CJEU C-39/97 Canon.
17 Ibid. para 23.
18 AG's opinion C-39/97 *Canon* para 44-47; Fhima, Ilanah, Gangjee, Dev S., The Confusion Test in European Trade Mark Law, Oxford University Press, 1 ed., 2019 [cit. Fhima & Gangjee]p. 106.

2. WHY ARE THE RELEVANT SIMILARITY FACTORS RELEVANT?

As expressed in *Tritton*, while the guidance provided by the CJEU in Canon is helpful, the factors are difficult to apply without any reference to an underlying benchmark principle for whether goods and services are similar or not.[19] This further applies to the fact that the list of factors mentioned by the CJEU is non-exhaustive, which raises the question what additional factors may be relevant and why.

It has been claimed that the CJEU's approach meant that the focus of the similarity assessment shifted away from the good's physical nature. The shift would mean that also circumstances under which the goods are used and sold were deemed relevant, due to origin confusion considerations, while still being related to the goods themselves. Such a shift would allow for a more appropriate assessment as to whether there are such links between the goods and their surrounding circumstances that may lead consumers to be confused as to the origin of the goods.[20] Consequently, as stated in *Tritton, "one is tempted to say"* that the benchmark principle for whether goods are similar or not should be origin confusion, in the sense that the relevant public would risk believing that an undertaking making the one product would also be involved in the making of the other.[21] As the CJEU has repeatedly held that the underlying interest of the likelihood of confusion provision is to protect the trade mark proprietor's interest, in the sense that trade marks must be able to fulfil their origin function, such a conclusion is also coherent with underlying trade mark law rationale.[22] Furthermore, in *IHT*, the CJEU has stressed that a relevant risk of confusion amongst consumers may arise from marks used also on products which are

> *"sufficiently close to induce users to incorrectly conclude that the products come from the same undertaking".*[23]

Further support for this line of argument is found in EUTMR's recital 11:

> *"protection should apply also in cases of similarity between the mark and the sign and the goods or services. An interpretation should be given for the concept of similarity in relation to the likelihood of confusion".*

The recitals in earlier versions, as well as the CJEU, has also stated that it is indispensable to interpret the concept of similarity in relation to likelihood of confusion.[24] This is also consistent with earlier national trade mark law in some EU Member States, such as Germany and Sweden, where the focus of the assessment of similarity of goods test was not put on how alike the goods are but whether they are similar enough for origin confusion to arise.[25] Similarly, the WIPO Intellectual Property Handbook state that, as a general rule, goods are similar if the public is likely to believe that the goods come from the same source if they are offered for sale under an identical mark.[26] This also appears to be the reason for why such additional factors as *shared distribution channels and usual origin* have been held to be relevant, as a consumer may perceive goods as sharing the same commercial origin based on such factors.

3. THE LEVEL OF ABSTRACTION ASSESSMENT AND CHALLENGES

When goods are compared under the relevant factors, separate benchmarks are needed also for when assessing similarity under each of those factors individually. However, the assessment of what benchmark is to be applied generates challenges related to the level of abstraction. The level of abstraction being the abstract frame in which two goods must both fit to be deemed similar.

[19] Davis, Richard; St Quintin, Tom; Tritton, Guy, Tritton on Intellectual Property in Europe, Sweet & Maxwell, 5 ed., 2018 [cit. Tritton] p. 372

[20] Fhima, Ilanah (ed.), Trade Mark Law and Sharing Names, Edward Elgar Publishing, 1 ed., 2009 [cit. Fhima (2009)] p. 116.[21] Tritton p. 372.

[22] CJEU C-20/14 *BGW* para 26; CJEU C-705/17 Hansson para 35.

[23] CJEU C-9/93 *IHT* para 16.

[24] CJEU C-705/17 *Hansson* para 43.

[25] Wessman p. 31-32, 222.

[26] WIPO Intellectual Property Handbook, WIPO Publication, 2nd ed. 2004 [cit. WIPO handbook] p. 86.

[27] EUIPO Guidelines for Examination of EUTMs, 2020 [cit. EUIPO Guidelines] C.2.2, 3.2.1 Nature; Muyldermans & Maeyaert p. 102.

[28] EUIPO Guidelines C.2.2, 3.2.1 Nature; Muyldermans & Maeyaert p. 102.

[29] EUIPO-TMG 2020, C.2.2, 3.2.2 Intended purpose.

[30] GC T-85/02 *Castello*.

[31] GC T-505/12 *Longines*.

[32] GC T-130/03 *Alcon* para 57; GC T-483/04 *Armour Pharmaceutical* para 70; EUIPO Guidelines C.2.2, 5.1.2 Pharmaceuticals versus pharmaceuticals; Fhima & Gangjee p. 107-108.

[33] GC T-175/06 *Mezzopane*; GC T-584/10 *Yilmas*.

For example, the nature of the goods is defined based on the essential qualities or characteristics by which the good is recognised, which are often the ones used to usually define under what type of product or category the product belongs to.[27] The EUIPO Guidelines state that the nature of the goods can be established by asking: *what is it*?[28] The Guidelines provides the examples that yoghurt is a milk product, a car is a vehicle, and a body lotion is a cosmetic product. However, the response to what a yoghurt, a car or a body lotion is could just as well be answered under a more narrow level of abstraction – that a yoghurt is a yoghurt, a car is a car and a body lotion is a body lotion – as the physical nature, composition and function of e.g. a yoghurt differs from that of a cheese, even though they both are made from milk and thus are both milk products.

As established above, the similarity assessment should be carried out from the perspective of the average consumer and only factors related to the goods themselves are relevant. But the relevant factors listed in *Canon* shows that it includes such circumstances surrounding the goods that the average consumer may come to rely upon, when making up their mind as to whether the goods are sufficiently interlinked to induce them to believe that those goods may come from the same commercial origin. Based on those considerations, the relevant level of abstraction should arguably also be decided in the same light of origin confusion considerations. If there is a significant risk that the average consumer would think that a yoghurt and milk share the same commercial origin, because they both share the essential quality/characteristics of being milk products, the choice of abstraction level should not be as narrow that it would preclude a finding of a similar nature, simply because they differ in more specific qualities or characteristics. Still, it is not apparent from case-law that such origin confusion considerations are decisive, or even taken into account, when the level of abstraction is decided. The EUIPO Guidelines state in relation to more than one relevant factor that the level of abstraction must be sufficiently narrow.[29] The Guidelines do however not explain how narrowly the level should be defined or give any reason as to why the level must be narrow. Nevertheless, cases concerning e.g. the beverage, fashion and pharmaceutical sectors show that the level of abstraction chosen appears to differ greatly depending on the type of goods concerned.

Examples:

Milk vs. Cheese [Deemed to be similar goods][30]

They have a similar nature (both are milk products), are in competition (both serve the purpose of meeting calcium needs), share relevant distribution channels (both can be found in the same section of a supermarket), and have the same usual origin (they are perceived by the relevant public as usually being produced under the control of the same undertaking).

Watches vs. Sunglasses [Deemed to be dissimilar goods][31]

They do not have the same nature (they don't share the same raw materials), do not have the same purpose (watches tell time and sunglasses protect the eyes) are not in competition (people don't choose between buying watches and buying sunglasses), are not complementary (a watch is not important for using sunglasses or vice versa), do not share relevant distribution channels (they are sold in specific places where you don't find the other; supermarkets, department stores and in different specialist stores)

Any pharmaceutical vs. Any other pharmaceutical regardless of indication [Deemed to be similar goods][32]

They have the same nature (pharmaceutical products), have the same purpose (treatment of health problems), have the same consumers (medical professionals and patients) share relevant distribution channels (typically pharmacies).

Beer vs. Wine (also Beer vs. Tequila) [Deemed to be dissimilar goods][33]

They do not have the same nature (different ingredients, manufacturing process, taste, smell and colour) do not have the same purpose (beer quenches thirst and wine is to be savoured), do not share relevant distribution channels (not placed on the same shelves in the store) do not have the same usual origin (beer producers do not usually produce wine and vice versa)

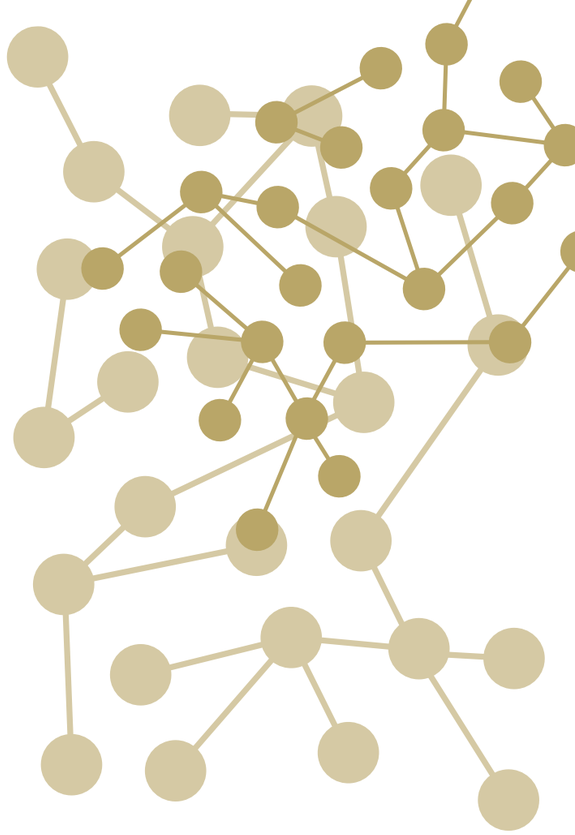
While it has been claimed that all goods are similar at some level, it is argued that the relevant level of abstraction chosen should be the broadest level that the relevant public is likely to use when they are making up their mind as to whether goods come from the same commercial origin. Similarity of goods and a likelihood of confusion can therefore never arise if there is no common denominator among the goods that the average consumer would come to rely upon when considering the commercial origin of the goods. The level of abstraction would therefore never be so broad that all goods may be considered similar. This means that the circumstances in the well-known old UK landmark case *Kodak*[34] would not amount to similar goods. In that case, bicycles and cameras were held to be sufficiently similar for there to be a likelihood of confusion, as a likelihood of confusion was imminent due to the prominent reputation of the Kodak mark if both goods were branded with the same mark. Under EU trade mark law, such goods would lack a common denominator, related to the goods themselves, that the average consumer would come to rely upon when reflecting on the commercial origin of the goods.

One approach to determining the proper level of abstraction would be to assume that two goods subject to a comparison are both branded with an identical trade mark. The assessment would then start at the broadest level and by asking whether the average consumer would both find that level rational and use any common denominator at that level to make up their mind as to whether there is a shared commercial origin among the goods. As the perception of a common origin also includes indirect confusion, where the relevant public might believe that the goods come from economically-linked undertakings, the relevant public's possible perception of the goods being produced under the control of the trade mark proprietor, e.g. under a license agreement, should also be taken into account. It is argued that the risk of the average consumer being victim to such indirect confusion may arise at a broader level of abstraction than direct confusion, as that degree may still be able to cause the relevant public to at least find it likely that the trade mark proprietor has branched out into neighbouring markets in some way. If that level is deemed too broad under such origin confusion considerations, the assessment can proceed by applying a narrower level of abstraction and repeating the inquiry. As an illustration, that would mean that when assessing such relevant factors as *nature of the goods, intended use and shared distribution channels* factors, when comparing alcoholic and non-alcoholic beverages, the starting point could be the questions whether the average consumer would classify both goods as beverages, intended for drinking and mixing, and as being sold in stores that sell beverages. If so, it must be asked if the average consumer might use those broad common denominators when making up their mind about whether the goods share a commercial origin, if branded with an identical trade mark. If the average consumer were to find it unusual that a producer of alcoholic beverages would also produce non-alcoholic beverages and vice versa, the question must be asked if there is a risk that the average consumer might at least believe that an identical mark indicates that the one is produced under the control or supervision of the other, taking into consideration the circumstances mentioned above. Such a risk could arguably exist also despite the average consumer not being aware of a common practice of such license agreements in the sector concerned. If such a risk exists, that should arguably be reflected in the level of abstraction chosen.

However, considering the examples from case-law presented above and the statement in the EUIPO Guidelines, this approach is seemingly in conflict with current practices. It can only be assumed that the reason is related to policy considerations concerning the principle of speciality, as it seeks to reconcile the trade mark rights with competition interests and the principle of free movement of goods. However, as established above, the purpose of the principle has been to limit the exclusive rights conferred by the trade mark to the actual function of the trade mark, serving as a corollary to the essential function of the trade mark. The principle has consequently, as accounted for above, not been applied in its strictest form under the protection against likelihood of confusion due to origin confusion considerations. The principle should therefore not be used as a justification for an approach to the assessment of the level of abstraction that might risk being detrimental to that origin function. That would be contrary to what the provision aims to protect, if the scope of protection is narrowed down past the point of goods that do share some common element at a broad level. Narrowing the scope of protection in this way may come to adversely affect the trade mark's origin function, as it may preclude a finding of a likelihood of confusion, as it prevents a global appreciation of likelihood of confusion from being carried out.

While the argued approach could lead to more cases where a minimum degree of similarity among goods is found, it is still arguably in line with underlying trade mark law rationale. This is especially so in light of that the concept of similarity should be interpreted in relation to the likelihood of confusion, and that the CJEU has held that it is the trade mark proprietor's interest - protection of the origin function - that should prevail when assessing the scope of protection under likelihood of confusion. The application of the factors under the similarity of goods test should therefore not be used as a way to counter that prevailing interest, by at times seemingly taking competition interests into account when the assessments of those factors and their level of abstraction are carried out. It is argued that the level of abstraction should never be defined so narrowly that it risks prejudging a likelihood of confusion, if the goods share a common denominator and the case may amount to a likelihood of confusion if the trade mark proprietor were given the opportunity to have all relevant factors taken into account. While a vague similarity would still often be a decisive factor for a finding of a lack of likelihood of confusion under the global appreciation, that may not always be the case if all other relevant factors can be taken into account. This is arguably also in line with the policy considerations under the similarity of signs test. The following quote, by the Advocate General in *Equivalenza Manufactory*, provides a concluding summary:[35]

> *"The condition of similarity of the signs should remain a minimum prerequisite in order to access [the likelihood of confusion] protection, and that condition should not, except in cases of a manifest failure to comply, be used to cut short any debate on that likelihood of confusion".*[36]



Gustav Gierlöff

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[34] UK case *Eastman Kodak Co v Kodak Cycle Co* [1898] 15 R.P.C. 105.

[35] CJEU C-328/18 P *Equivalenza Manufactory*; AG's opinion C-328/18 P Equivalenza *Manufactory* para 79-82.

[36] AG's opinion C-328/18 P *Equivalenza Manufactory* para 80.

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Artificial Intelligence creates, invents … and challenges Intellectual Property Law

AI: the mind behind creative and innovative works. Can a sui generis system be a solution?

By Isabella Lorenzoni, LL.M.

ABSTRACT

Recent developments in technology are leading to the production of machines with the intellectual capacity to create and invent, just like humans. Artificial Intelligence (AI) is challenging copyright and patent law, as the actual author and inventor is no longer a natural person, but a machine. This article focuses on creative and innovative outputs generated autonomously by AI and scrutinises whether and to what extent they are eligible for protection through traditional Intellectual Property (IP) rights. Lastly, this article seeks to determine whether the current legal system is able to deal with this phenomenon, as well as to present a solution that can do so, in the form of a sui generis system tailor-made for AI-generated materials.

1. INTRODUCTION

AI is a fascinating world that brings together experts from multiple fields to create machines and software with abilities similar to those of human beings. In fact, smart technologies can mimic some human behaviours, such as learning, creating, inventing, interacting with people and holding a conversation.[1] Despite its intriguing profile, AI can be seen as a threat to humankind, especially by those who have seen science fiction films like *The Terminator* or *The Matrix*, in which war ensues between humans and machines.[2] But leaving aside such an apocalyptic scenario, AI has become a burgeoning field of research, not only for computer scientists and engineers, but also for lawyers, policymakers and philosophers. If AI can mimic some activities of the human brain, and interact autonomously with human beings, many fields where AI is involved need to be regulated, in order to balance the need of progress with ethical issues and human rights.[3]

Recent developments in AI have resulted in machines and software with the "intellectual" capacity of creating and inventing. Hence, the field of IP Law has been influenced by this new world of intellectual creations that are not strictly shaped by human beings. AI challenges traditional notions of authorship and inventorship and some aspects of copyright and patent systems collide with AI-generated outputs. Therefore, legal answers on how to deal with this technology are necessary and urgent.

2. WHAT IS AI?

> *"Most people don't understand just how quickly machine intelligence is advancing, it's much faster than almost anyone realized."*
>
> *- Elon Musk -*

There has been much speculation about AI in the context of the future of the human race and its coexistence with intelligent machines. In fact, the term "Artificial Intelligence" was not coined in the last decade or during the so-called fourth industrial revolution (or "AI revolution").[4] Rather, it was introduced in 1956 by John McCarthy – though the study of machines with the ability to do intelligent things is even older, going back to 1950 and a mathematician, Alan Turing, who is considered "the father of modern computer science".[5] Even today we talk of the "Turing test", which finds that a machine can 'think' when it is able to imitate a human being so well that an interrogator cannot tell the difference between the answers of the human and the answers of the machine.[6]

In essence, AI systems could be described as software programs that interact with physical or digital environments and, which, by acquiring, collecting and interpreting data, decide the best actions to take in order to achieve a given goal.[7] Basic AI systems display three main capabilities: perception, reasoning/decision making and actuation.[8] These capabilities can be divided into two main groups: AI's capability to reason and its capability to learn. The first concerns the ability to transform data into knowledge in order to make a decision regarding which action to take to solve a problem.[9] The second refers to learning techniques, such as machine learning, neural networks[10] and deep learning.[11] Some of them do not allow the giving of a clear explanation of a machine's reasoning for certain decisions. For this reason, experts have coined the expression "black-box AI" scenario,[12] referring to the fact that the decision of an AI cannot always be explained and that the human factor is not decisive in every choice of an AI.[13]

Some authors propose a "multi-level model"[14] for discussing AI, where AI is divided into several levels. In particular, it has been proposed that Level 1 encompasses semi-autonomous AI systems, which have the same characteristics as software programs and are controlled by humans, but use advanced algorithms.[15] Level 2 includes fully autonomous AI systems that are dependent on data and more advanced AI systems able to generate unexpected outputs.[16] Furthermore, a third level has been hypothesised as a futuristic idea, based on the intersection of biological and digital intelligence.[17]

In copyright and patent law, the real obstacles arise when human intervention is minimal and the level of autonomy in AI systems allows them to create works of art and generate innovative ideas with algorithms that are self-assembling and not written by humans.[18]

3. IP RIGHTS CHALLENGED BY AI

3.1. Copyright challenges

Natural rights theorists[19] justify copyright protection because "it is the right thing to do", since the creative work generates from the author's mind, and therefore it is considered an expression of the author's personality.[20]

Other utilitarian theorists[21] stressed the necessity to give a reward to the author, who puts efforts into an artistic work.[22] Copyright and other IP rights are recognised to incentivise creativity and innovation, by allowing the author a monopoly to solely exploit the work for a certain period of time.[23]

1 Granmar, C. (2018) 'Artificial intelligence and fundamental rights'. Workshop description, 15–16 June 2018, Stockholm University.

2 Rocha, E. (2018) 'Sophia: Exploring the Ways AI May Change Intellectual Property Protections'. *Journal of Art, Technology & Intellectual Property Law* 28 (2), 126–146.

3 Granmar, C. (2018).

4 Regarding the fourth industrial revolution, see https://www.epo.org/news-issues/news/2017/20171211.html, (accessed on 4 February 2020); Chimuka, G. (2019) 'Impact of Artificial Intelligence on Patent Law. Towards a New Analytical Framework – [the Multi-Level Model]'. *World Patent Information* 59 (101926).

5 Smith, C., et al. (2006) 'The History of Artificial Intelligence'. *History of Computing CSEP* 590A, University of Washington, p.4.

6 Ibid., pp. 5 ss.

7 AI-HLEG 'Ethics Guidelines for Trustworthy AI' European Commission, 08.04.2019, https://ec.europa.eu/digital-single-market/en/news/ethics-guidelines-trustworthy-ai, (accessed on 5 February 2020), p. 36.

8 AI-HLEG 'A Definition of AI: Main Capabilities and Disciplines' European Commission 08.04.2019 https://ec.europa.eu/digital-single-market/en/news/definition-artificial-intelligence-main-capabilities-and-scientific-disciplines (accessed on 6 February 2020), p. 3.

9 Ibid.

10 Ibid., p. 4: "[N]eural networks [...] is loosely inspired by the human brain in that it has a network of small processing units (analogously to our neurons) with lots of weighted connections among them."

11 Ibid., p. 4: "[D]eep learning [...] refers to the fact that the neural network has several layers between the input and the output that allow to learn the overall input-output relation in successive steps. This makes the overall approach more accurate and with less need of human guidance."

12 Ibid., p. 5.

13 Ibid.; Granmar, C. (2019) 'Artificial Intelligence and Fundamental Rights from a European Perspective' in *Artificial intelligence and fundamental rights*, Granmar C., Fast Lappalainen K., and Storr C. (eds.), p. 25.

14 Chimuka, G. (2019).

15 Ibid., pp. 5-6.

16 Ibid., pp. 7-8.

17 Ibid. p. 9. See also the research project *Neuralinks*, led by Elon Musk https://www.dezeen.com/2019/07/22/elon-musk-neura-link-implant-ai-technology/ (accessed on 6 February 2020).

18 Chimuka, G. (2019), p. 9.

19 Locke, J. (1698); Hughes, J (1988) 'The Philosophy of Intellectual Property', 77 Georgetown LJ 287; Bently, L., Sherman, B., Gangjee, D., and Johnson, P. (2018) 'Intellectual Property Law', Oxford University Press, p. 40.

20 Bently, L., et al. (2018), p. 40.

21 Mill J.S., (1862) 'Principles of Political Economy' (5th Edition), New York, Appleton.

22 Bently, L., et al. (2018), pp. 40-41.

23 Ballardini, R.M., He, K., and Roos, T. (2019) 'AI-Generated Content: Authorship and Inventorship in the Age of Artificial Intelligence' in *Online Distribution of Content in the EU*. Pihlajarinne, T., Vesala, J., and Honkkila O. (eds.), p. 132–133; De Cock Buning, M. (2016) 'Autonomous Intelligent Systems as Creative Agents under the EU Framework for Intellectual Property'. *European Journal of Risk Regulation*, 7(2), pp. 129-130.

Evidently, these theories are based on the human being as the only possible (and – formerly – only foreseeable) author of literary, artistic or musical works (the so-called anthropocentric vision).[24]

Nevertheless, in our digital environment, AI machines are also able to create works of art. For instance, the *Next Rembrandt*[25] produces paintings using a 3D printer, controlled by an AI with a facial recognition algorithm that analyses the paintings of Rembrandt and creates new paintings that replicate his style.[26] Hence, computers are no longer mere tools, like brushes or pens, used by artists to create art.[27] Nowadays, AI machines can make most of the decisions in the creative process without being specifically directed by humans.

3.1.1. Who is the author?

In the current copyright system, AI is not taken into consideration as a possible creator of a literary, artistic and musical work. In the Berne Convention,[28] despite that no clear definition of *author* is provided, it is possible to deduce that the only imaginable author is a human being. There are references to the nationality of the author[29] and the death of the author.[30] The TRIPS Agreement[31] considered "the life of a natural person"[32] for the term of protection. As for the European legal framework, the Term Directive[33] refers explicitly to the life of the author[34] and the Software Directive[35] seems to provide a general and consolidated rule according to which natural persons are generally the only ones entitled to authorship.[36]

The only jurisdiction that seems to consider works generated by computer programs is the UK Copyright, Designs and Patents Act 1988 (CDPA), according to which "the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken".[37] Even if one were to apply this provision to modern AI creative systems, uncertainty would remain in the identification the person who made the necessary arrangements. Was it the person who operated the computer? Was it the programmer?[38] Or was it the data trainer?[39]

3.1.2. Originality criterion challenged

AI also challenges another requirement that needs to be met: originality. A work is original and therefore eligible for copyright protection if it is the *author's own intellectual creation*.[40] In *Infopaq*,[41] the Court of Justice of the European Union (CJEU) has harmonised the standard of originality for every subject matter, not only for databases, computer programs and photographs. In *Painer*,[42] the CJEU further stated that an intellectual creation is the author's own if it reflects their personality; this occurs when the author is able to express their creative abilities by making free and creative choices.[43]

Based on the interpretation of the CJEU, the threshold of the originality test seems to be strictly connected to the human being as the only imaginable author of a creative work. In fact, if a work is original in the meaning that it must reflect the personality of the author and have their unique and personal touch, such work is regarded as an extension of the author's persona[44] – something that even advanced AI systems do not (yet) have.

3.2. Patent challenges

Patent monopoly is not so different from the copyright system; it has been seen as a reward for the contribution of the inventor and their intellectual activity. It is considered a natural right of inventors.[45] However, the common justification for granting patents seems to lie in the public benefit (the so-called "information function" of the patent system).[46] An inventor should obtain a monopoly for an innovation, if the public can benefit from it in return. The rationale underpinning this theory can be seen in the fact that the inventor must disclose the invention by publishing it in the patent application, in exchange for a monopoly of 20 years.[47] Without the possibility of obtaining this form of protection, new technologies would remain secret.[48] Such justifications for the patent system could be challenged by modern technologies, where AI systems demonstrate the capability of producing innovative materials, with little involvement of any human being in the inventive process.

An example of an AI system able to generate new ideas without any specific objective is DABUS, a "Device for the Autonomous Bootstrapping of Unified Sentience", by Stephen Thaler.[49] DABUS can perform "brain-like functions" using artificial neural networks.[50] It has created two patentable subject matters: a plastic food container based on fractal geometry and a flashing light to signal an emergency.[51] Both patent applications were refused by the European Patent Office (EPO)[52] on the grounds that they did not meet the legal requirements of the European Patent Convention (EPC 2000), as the inventor must be a human being and not a machine.[53] In fact, the applicant stated DABUS as the inventor,[54] as it was the machine that made the inventions and recognised the novelty of its own idea before any natural persons.[55] The applicant also claimed that "inaccurately listing a natural person as inventor would be misleading to the public",[56] and therefore contrary to the principle that the applicant must indicate the actual deviser of the invention.[57]

3.2.1. Who is the inventor?

A recent study on inventorship and AI commissioned by the EPO specified that the inventor, in most jurisdictions, must be a natural person.[58] The EPC 2000 does not provide a clear definition of inventorship, nor does it specify that an inventor must be a human being. However, following on the reasoning of the EPO in the DABUS decisions, it seems clear that the patent office only accepts applications that identify a natural person as the inventor.[59] Currently, AI systems have no legal personhood and hence cannot hold rights deriving from the status of inventor. Therefore, they cannot transfer or assign any rights, nor own an invention.[60] The solution adopted by the EPO is that the owner of an AI machine is also the owner of any output created by that machine.[61]

3.2.2. The inventive step challenged

One of the requirements of patentability that is challenged by AI is the inventive step.[62] A person skilled in the art must find the invention non-obvious in order for it to pass this test. Therefore, the threshold in patent law has always been based on the fictional character of a human person skilled in the art, who is uninventive and conservative, with average knowledge and skills relevant in the field of the invention.[63]

It is argued that if AI systems were to be used as a routine tool in the inventive process, the threshold of the inventive step would consequently need to be raised, as a person skilled in the art would routinely use AI.[64] On the one hand, inventions generated by AI may be obvious to a person skilled in the art who has access to AI.[65] On the other hand, if the skilled person did not adapt in step with technology, all AI-generated inventions would be non-obvious.[66] Thus, the threshold of the inventive step would instead be too low.[67]

However, it is currently assumed that the inventive step will not be modified by inventions involving AI, as the person skilled in the art has access to all knowledge of the field, including AI technology. Nevertheless, it is also assumed that if what many engineers are predicting turns out to be true – that AI will reach the level of human intelligence in about a decade[68] – AI machines would improve to such an extent that all inventions would be rendered obvious.[69]

[24] De Cock Buning, M. (2016), 310–322; Lauber-Rönsberg, A. and Hetmank S. (2019) 'The Concept of Authorship and Inventorship Under Pressure: Does Artificial Intelligence Shift Paradigms?'. *Journal of Intellectual Property Law & Practice* 14 (7), 570–579.

[25] https://www.nextrembrandt.com/ (accessed on 6 February 2020).

[26] Guadamuz, A. (2017) 'Artificial Intelligence and Copyright'. *WIPO Magazine* 5/2017, p. 3; Ballardini, R.M., et al. (2019), p. 121.

[27] Guadamuz, A. (2017), p. 2.

[28] Berne Convention for the Protection of Literary and Artistic Works of 1886.

[29] Article 3 Berne Convention.

[30] Articles 6bis (2), 7(5), 7bis Berne Convention.

[31] Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) of 1994.

[32] Article 12 TRIPS Agreement.

[33] Directive 2006/116/EC on the term of protection of copyright and certain related rights (Term Directive).

[34] Article 1 (1)(2) Term Directive.

[35] Directive 2009/24/EC on the legal protection of computer programs (Software Directive).

[36] Article 2(1)(2) Software Directive.

[37] CDPA 1988 Section 9 (3).

[38] Bently, L., et al. (2018), p. 128; see also Bonadio, E., Mcdonagh, L., and Arvidsson, C. (2018) 'Intellectual Property Aspects of Robotics'. *European Journal of Risk Regulation* 9 (4), p. 664.

[39] See for instance Yanisky-Ravid, S. and Liu, X. (2017) 'When Artificial Intelligence Systems Produce Inventions: The 3A Era'. *Cardozo Law Review*, 39 (6).

[40] Article 3(1) Directive 96/9/EC on the legal protection of databases of 11 March 1996 (Database Directive); Article 1(3) Software Directive; Article 6 Term Directive.

[41] Judgment of 16 July 2009, *Infopaq International A/S v Danske Dagblades Forening*, C-5/08, EU:C:2009:465.

[42] Judgment of 1 December 2011, *Eva-Maria Painer v Standard Verlags GmbH*, et al., C-145/10, EU:C:2011:798.

[43] Ibid., [88], [89].

[44] Bently, L., et al. (2018), p. 40.

[45] Ibid., p. 397.

[46] Ibid.

[47] Article 63 (1) EPC 2000.

[48] Bently, L., et al. (2018), p. 398; see Article 83 EPC 2000.

[49] http://www.imagination-engines.com/ and https://www.bbc.com/news/technology-49191645, (accessed on 22 February 2020).

[50] http://imagination-engines.com/iei_dabus.php (accessed on 22 February 2020).

[51] Abbott, R. (2019) 'The Artificial Inventor Project'. *WIPO Magazine* 6/2019.

[52] EPO decisions of 27 January 2020, on EP 18275163 and EP 18275174.

[53] EPO https://www.epo.org/news-issues/news/2020/20200128.html (accessed on 23 February 2020).

[54] EPO decision of 27 January 2020, on EP 18275163, [3].

[55] Ibid. [5].

[56] Ibid., [12].

[57] Ibid.; Patents Act 1977, s. 7(3).

[58] Shemtov, N. (2019) 'A study on inventorship in inventions involving AI activity' commissioned by the EPO, p. 10; Five IP Offices (2018) 'Report from the IP5 expert round table on artificial intelligence'https://www.fiveipoffices.org/wcm/connect/fiveipoffices/5e2c753c-54ff-4c38-861c-9c7b896b2d44/IP5+roundtable+on+AI_report_22052019.pdf?MOD=AJPERES&CVID= (accessed on 23 February 2020).

[59] See Articles 60 (1), 62, 81; Rules 20, 19(1)(3) EPC 2000.

[60] Shemtov, N. (2019), p. 25.

[61] EPO decision of 27 January 2020, on EP 18275163, [32].

[62] Article 56 EPC 2000.

[63] Bently, L., *et al.* (2018), pp. 582-584.

[64] Blok, P. (2017) 'The Inventor's New Tool: Artificial Intelligence - How Does It Fit in the European Patent System?'. *European Intellectual Property Review* 39 (2), 69-73.

[65] Modkova, A. and Vara, H. (2018), 'The Robot Revolution - Reinventing Inventorship'. *Intellectual Property Forum: Journal of the Intellectual and Industrial Property Society of Australia and New Zealand, 111, p. 16.*

[66] Ibid.

[67] Abbott, R. (2019) 'Everything is Obvious'. *UCLA Law Review* 66 (1), p. 5.

[68] Ibid., pp. 4–5.

[69] Ibid., p. 8.

3.3. Flaws in the copyright and patent systems for AI-generated outputs

The traditional IP rights seem to be unsuitable for protecting AI-generated materials. Neither copyright nor patent rights provide certain and stable legal solutions for investors who want to protect valuable assets deriving from AI systems.

(i) *Copyright*. A work that lacks human intervention is generally not suitable for copyright protection.[70] In primis, this is because the author must be a natural person – but, even if an AI system could be recognised as a legal entity and thus eligible for authorship, the originality standard as interpreted by the CJEU, could not be met by a non-human author.[71] Therefore, changes in the system would be needed: the originality requirement should be adjusted for AI,[72] a different legal term that does not start its calculation from the death of the author should be introduced, and moral rights should be allocated differently.[73] As a consequence, this would result in a separate copyright system for AI-generated works ("robot copyright").[74]

(ii) *Patent*. Including AI-generated inventions in the framework of the current patent system would mean that a natural person should qualify as the inventor, such that a "proxy human inventor"[75] would be named even if this was not the actual deviser. However, such a patent could be challenged and invalidated before courts if it was proved that an AI system was responsible for the invention and that the natural person had been wrongly designated.[76] Furthermore, considering the peculiarity of the AI field, many actors could claim inventorship. At least ten stakeholders that could qualify for inventorship have been identified.[77] One example is the software programmer who creates the AI system. However, it could be argued that he/she is not entitled to rights related to the patentable inventions autonomously and unpredictably generated by that AI.[78] The data supplier might also claim inventorship, as he/she is the operator who has fed the AI system with the data necessary to achieve a target.[79] But what happens when an AI is incorporated into a robot able to find its way in physical space and acquire data on its own?[80] Many parties could have an interest in being recognised as the inventor, but none of them could qualify as such in a traditional patent meaning because of a lack of "technical contribution".[81]

Problems concerning the sufficiency of disclosure might also arise. According to Rule 42(1)(c) and (e) EPC 2000, an invention must be described in terms of its structure and its function, and the description must disclose any feature in sufficient details to allow a skilled person to create the invention without undue burden and the need to adopt inventive skills.[82] Even if the input and output for an AI-generated invention are known, what happens in between may be obscure and difficult to explain, as it can remain unknown even to the person who has programmed and input data into the AI system.[83] The description of the decision process does not guarantee that the result will be the same, even if the exact same process is performed and the same data are provided.[84] If the examining division finds a patent application insufficient, the onus of proving that the invention can be created based on what is disclosed in the claims shifts to the applicant.[85] Thus, an applicant who intends to patent an AI-generated invention could be discouraged from doing so, if there is a risk that the requirement of sufficient disclosure might not be satisfied due to the so-called "black box problem".[86]

70 De Cock Buning, M. (2016), p. 10.
71 Judgment of 16 July 2009, *Infopaq International A/S v Danske Dagblades Forening*, C-5/08, EU:C:2009:465; Judgment of 1 December 2011, *Eva-Maria Painer v Standard Verlags GmbH*, et al., C-145/10, EU:C:2011:798.
72 Lauber-Rönsberg, A. and Hetmank S. (2019), p. 576.
73 Ibid., pp. 576–577.
74 Ibid.
75 Gervais, D. (2020) 'Is Intellectual Property Law Ready for Artificial Intelligence?'. *GRUR International* 69 (2), p. 118.
76 Ibid.
77 Yanisky-Ravid, S. and Liu, X. (2017), p. 2231.
78 Ibid.
79 Ibid., p. 2232.
80 The AI-generated invention may belong to the public. Ibid., pp. 2232, 2234.
81 Ibid., p. 2233. See also Shemtov, N. (2019), p. 30.
82 EPO Guidelines for Examination "Sufficiency of disclosure", F. III. 1.
83 Five IP Offices (2018), p. 3, D.8.
84 Ibid.
85 EPO Guidelines for Examination "Sufficiency of disclosure", F. III. 1.
86 See Chapter 2; Granmar, C. (2019), p. 25.

4. POSSIBLE SCENARIOS FOR AI-GENERATED OUTPUTS

Scholars have described scenarios in which different legal solutions are applied to situations where an AI is the main character behind works of art and inventions.

(i) *AI-generated outputs as public domain*. A possible scenario is that neither creative works nor inventions generated by autonomous AI with little or no human intervention would be protected by IP rights. Thus, they would fall in the public domain and it has been said that this solution would possibly benefit society as a whole.[87] Indeed, AI does not need to be rewarded for the work that it creates and no incentives are necessary,[88] so the theories that justify copyright and patent protection do not apply and fit into the scheme of AI-generated outputs. However, this option is not entirely satisfactory, as "computer-generated works can be both useful and valuable".[89] In fact, it has been observed that other instruments would be used by owners of AI systems to protect their outputs (trade secrets, *in primis*).[90] Hence, such scenarios might lead to inventions being kept secret and no investments being made in new technologies, with possible arrest of innovation and development.[91]

(ii) *AI-generated outputs being protected under copyright and patent law*. Another possible scenario that has been suggested[92] is to protect AI-generated outputs under the framework of copyright and patent law, although a different approach and changes in the legal systems would be needed. It has also been suggested that legal personhood should be granted to AI,[93] with a similar status that corporations have, in order to bear rights and obligations,[94] with AI recognised as the author/inventor of a work/invention. For instance, the European Parliament in 2017 issued a resolution[95] aiming at adopting legal solutions for AI issues, such as introducing an electronic personhood for at least the most sophisticated autonomous robots.[96] This resolution received criticism and has gone unheard by the Commission thus far.[97] At a national level, initiatives that aim to recognise AI as something more than a machine seem to have appeared on the horizon, though it has been observed that those attempts are still far from being considered full recognition of a legal status for AI.[98]

(iv) *Contractual tools for protecting AI-generated outputs*. A further solution that has been suggested is to leave protection of AI-generated works and inventions to private contracts, so that private investors could decide on a suitable regime to apply to an AI output, without having regulations interfere therewith.[99] However, leaving economic rights that arise from valuable inventions or works of art to contractual freedom alone could lead to imbalances in bargaining power and to legal uncertainty.

(v) *A sui generis solution*. Arguably, none of the aforementioned alternatives seems to offer a suitable solution for AI-generated outputs, as they do not provide stability and a clear legal environment. Therefore, another option could be to create a *sui generis* system tailormade for when AI is the "author" or the "inventor". When a particular subject matter is unsuitable for fitting into a specific legal form of protection, it is not uncommon to create an *ad hoc* regime that takes into account the particular aspects that make it fall outside the scope of protection.[100] The reason for creating a special regime is generally apparent from the subject matter that cannot find protection under the typical IP rights. *Sui generis* systems are implemented to encourage investments and prevent market failure.[101] A *sui generis* system displays unique characteristics, specifically tailormade for the subject matter that it protects, and usually differs from the typical IP rights as regards the requirements for a subject matter fall within their scope.[102] Other elements are generally also adapted, such as the period of protection or the time when the rights conferred starts running.

87 Ballardini, R.M et al. (2019), p. 132–133; De Cock Buning, M. (2016), p. 322.
88 De Cock Buning, M. (2016), p. 322.
89 Thampapillai, D. (2019) 'Copyright and Works of Non-Human Authorship: An Australian Prospective' in *Artificial Intelligence and Fundamental Rights*, Granmar C., Fast Lappalainen K., and Storr C. (eds.), p. 69.
90 Ballardini, R.M. et al. (2019), pp. 132–133.
91 Ibid., p. 129; Lauber-Rönsberg, A. and Hetmank S. (2019), p. 579.
92 See for instance Ballardini, R.M. et al. (2019), pp 133-135 and Lauber-Rönsberg, A. and Hetmank S. (2019), pp. 578-579.
93 See Ballardini, R.M. et al. (2019), pp. 130–132; Davies, C. R. (2011) 'An Evolutionary Step in Intellectual Property Rights – Artificial Intelligence and Intellectual Property'. Computer Law & Security Review, 27 (6).
94 Zibner, J. (2019), 'Artificial Intelligence: A Creative Player in the Game of Copyright'. *European Journal of Law and Technology* 10 (1), p. 12.
95 European Parliament Resolution of 16 February 2017 Recommendation to the Commission on Civil Law Rules on Robotics (2015/2103 (INL)).
96 Ibid., 59 (f).
97 Azam, M. (2019) 'Artificial Intelligence and EU Law: Balancing Risk, Innovation and Public Good' in *Artificial intelligence and fundamental rights*, Granmar C., Fast Lappalainen K., and Storr C. (eds.), pp. 106–108.
98 For example, the humanoid-robot Sophia was granted citizenship by Saudi Arabia, (https://www.hansonrobotics.com/sophia/ accessed on 6 February 2020); a chatbot programmed to be a seven-year-old boy became the first AI to be granted official residency in Tokyo (https://www.newsweek.com/tokyo-residency-artificial-intelligence-boy-shibuya-mirai-702382, accessed on 11 April 2020); a "robot agent" is under examination in Estonia as a legal status for AI (https://e-estonia.com/estonia-accelerates-artificial-intelligence/, accessed on 11 April 2020), and Shemtov, N. (2019), pp. 25, 26.
99 Davies, C. R. (2011).
100 Kur, A. and Dreier, T.K. (2013) 'European Intellectual Property Law: Text, Cases and Materials'. Cheltenham: Edward Elgar, p. 323.
101 Ibid.
102 Ibid.

5. PROPOSAL: A SUI GENERIS SYSTEM FOR AI-GENERATED OUTPUTS

"When an AI machine makes choices, the legal situation changes."

- Daniel Gervais -

The creation of a *sui generis* system may be an adequate way to mitigate the problems concerning AI-generated materials. It could provide answers to questions regarding whether or not such works should be protected and under which regime, since the existing IP rights do not offer stable or certain solutions.[103]

5.1. A two-pronged approach

The proposed *sui generis* system for AI-generated outputs would use a two-pronged approach, adapted for the type of AI in question. Going back to the two models of AI,[104] the *sui generis* regime would come into play for AI systems that belong to "Level 2", where the outcome of an AI is unpredictable. In the case of AI at "Level 1", where the outcome is predictable and the target set by a natural person who could qualify as author or inventor, the copyright and patent regimes would apply.

This dual system could nevertheless cause some problems, for instance in determining if an AI-generated output belongs to "Level 1" or "Level 2" and therefore whether it should be protected by copyright/patent law or by the special regime. Problems could also arise in case of infringements, giving a burdensome task to courts that have to identify which type of AI has been employed.[105] In such a scenario, a possible distinction could be drawn based on the results and whether these were expected or not. If the result was predicted and the target for the AI was directed by the person who programmed the machine, then the AI would likely belong to "Level 1". On the other hand, if the programmer and other persons involved were totally unaware of the outcome of the AI and the result was unpredictable, this would prove that the AI-generated output had been created by a "Level 2" AI. Furthermore, in this system, a specific AI division that deals only with AI technologies, consisting of experts of the field, could be implemented in both courts and offices.

5.2. Rationale

The rationale of such a *sui generis* system for AI-generated outputs can be recognised in the need to reward not the AI itself, but the investments made in AI technologies, and thus to encourage research, development and innovation.[106] A stable and clear legal system[107] that can ensure protection for AI-generated outputs is desirable in order to achieve this.

Indeed, AI technology is a valuable asset, not only in itself, but also for what it is able to create and invent.[108] Machines are becoming smarter, with the capacity of creating works that are arguably of higher quality than those produced by humans,[109] and of processing a huge amount of data[110] faster than a single person or a team would be able.

5.3. Works of art and inventions under the same system

The proposed *sui generis* system would apply to both AI-generated works of art and AI-generated inventions. Having two separate systems would be unnecessary, as the outcome in both cases is a result of the same form of technology. Both paintings and innovative objects would be created by AIs through similar processes. However, depending on the characteristics of the output, two routes could be taken: non-registration in the case of artistic, literary and musical works (as for copyright) and registration in the case of technological innovations (along the lines of the patent system).

5.3.1. Works of art

AI can create valuable works by meeting on-demand requests from the public in less time and at lower cost than a human and could be more adaptable than a human to consumers' needs.[111] Those characteristics are sufficient elements for attracting investments in AI-generated art.

Databases that are not original in the sense of being the author's own intellectual creation, but when substantial investments have been made, are granted a *sui generis* protection.[112] The same logic could apply for AI-generated works, so that the focus would not be on the originality criterion, as has been construed by the CJEU, but on the form of expression.[113] A work, autonomously created by an AI system, for which investments have been made, and that is original in the sense of not being a copy of an existing work, would be enough to grant protection under this *sui generis* system.[114]

Furthermore, much like in the copyright system in European jurisdictions, no form of registration would be needed, so that the system would be appealing enough for the rights holder to seek protection in case of infringement.

5.3.2. Inventions

When it comes to AI-generated inventions, a justification for a *sui generis* protection as an alternative to the typical patent monopoly may be seen in the subject matter at hand. Indeed, it has been observed that an AI-generated invention is a "computational invention" that needs protection because certain creations are possible only thanks to machines that are able to analyse huge amounts of data.[115]

Therefore, the system should be adapted to the peculiarity of the "inventor" and the generated subject matter. As the main challenge is the inventive step requirement, inspiration could be taken from the "innovation patent" of the Australian patent system, as some scholars have already suggested.[116] The "innovation patent" was introduced to protect innovations that have a short market life and do not meet the higher inventive standard of the patent system. This system was made especially for small and medium-sized enterprises, to allow them to quickly and inexpensively gain protection for new innovations.[117] Instead of the inventive step, an "innovative step" is needed. This requires that an invention is "different from what is known before and the difference makes a *substantial contribution* to the working of the invention".[118] When it comes to AI-generated inventions, a similar requirement that substitutes the inventive step could apply: novelty, industrial application and an "innovative step" could be seen as conditions tailored for such computational inventions.

5.4. Ownership

The main feature of the suggested system would be that identifying who is the author or the inventor of a protected work would no longer be necessary, because it would only apply to AI-generated outputs. The AI (at "Level 2") would be considered "the mind" behind the creation. This would eliminate the need for identifying a natural person that should be named the author or inventor of such work in order to make it eligible for copyright or patent protection.[119]

As Abbott suggested,[120] the owner of the AI system ("chattel") seems to be a suitable person for assigning ownership of the derivative output.[121] This would incentivise inventions and would also be consistent with the way in which personal property is generally treated in legal systems.[122] Another reason that the owner of the AI machine should be the owner of the AI-generated output is found in the logic that applies to the database system. The rights holder in that case is the maker of the database and the person who invests money and time in it.[123] The same rationale – to protect and incentivise investments in technology – would apply in the proposed *sui generis* system for AI-generated output. Therefore, having the person (or corporation) that invests in and owns the AI technology be the owner of its output could be seen as a consequence and an extension of their property rights.

The same conclusion could also be reached by applying the rules that usually operate in employment cases, for both copyright and patent systems, and in most of the IP-related *sui generis regimes*, where the choice is usually left to Member States. If an employee develops an invention in the course of employment, the ownership rights would as a general rule automatically be assigned to their employer.[124] As for AI-generated outputs, it has been suggested that an AI would operate as an "employee" (although this position has been criticised, as there is no employment relationship in the legal sense if the employee does not have legal personhood).[125] The rightful owner of the rights to the output would be the "employer", who would likely also be the owner of the machine.[126]

Once the owner of the AI-generated output has been identified and the economic rights allocated, the system would operate like any other; thus, transferring rights through negotiation and contractual tools would be permitted.[127]

[103] See for instance Davies, C. R. (2011), Azam, M. (2019) and Modkova, A. and Vara, H. (2018).
[104] See Chapter 2. For a complete analysis, see Chimuka, G. (2019).
[105] Lauber-Rönsberg, A. and Hetmank S. (2019) p. 577.
[106] Modkova, A. and Vara, H. (2018), p. 1.
[107] See for instance recital 12 Database Directive.
[108] See for instance Zatarain, J.M.N. (2017) 'The Role of Automated Technology in the Creation of Copyright Works: The Challenges of Artificial Intelligence'. *International Review of Law, Computers & Technology* 31(1), p 92; Zibner, J. (2019), p. 1.
[109] Zatarain, J.M.N. (2017) p. 95.
[110] Ibid., p. 96.
[111] Lauber-Rönsberg, A. and Hetmank S. (2019), p. 578.
[112] Article 7 (1) Database Directive.
[113] Thampapillai, D. (2019), p. 78.
[114] See for instance Davies, C. R. (2011), pp. 608–609; see also Dickenson, J., Morgan, A., and Clark, B. (2017) 'Creative Machines: Ownership of Copyright in Content Created by Artificial Intelligence Applications'. *European Intellectual Property Review* 39 (8), pp. 457–460; Thampapillai, D. (2019); Lauber-Rönsberg, A., and Hetmank S. (2019), pp. 574–575.
[115] Abbott, R. (2016) 'Hal the Inventor: Big Data and its Use by Artificial Intelligence' in *Big Data Is Not a Monolith*, Sigimoto, C. R., Ekbia H. R., and Mattioli, M. (eds.), p. 197.
[116] Modkova, A. and Vara, H. (2018), p. 16.
[117] https://www.ipaustralia.gov.au/patents/understanding-patents/types-patents (accessed on 2 April 2020).
[118] https://www.ipaustralia.gov.au/patents/applying-patent/innovation-patent-application-process (accessed on 2 April 2020).
[119] Abbott, R., (2016, 2019); Modkova, A. and Vara, H. (2018); Davies, C. R. (2011).
[120] Abbott, R. (2016) 'I Think, Therefore I Invent: Creative Computers and the Future of Patent Law'. *Boston College Law Review* 57 (4), p. 1114.
[121] Ibid.
[122] Ibid., for an in-depth analysis see pp. 1114, 1117.
[123] Recital 41 Database Directive.
[124] Bently, L., et al. (2018), pp. 134–136, and 629 ss. (Art. 60 EPC 2000 only specifies the national law that applies).
[125] Shemtov, N. (2019), p. 33.
[126] Davies, C. R. (2011), p. 618.
[127] Abbott, R. (2016) 'I Think, Therefore I Invent: Creative Computers and the Future of Patent Law', p. 1115.

5.5. Moral rights and attribution rights

In the proposed *sui generis* system, no moral rights or attribution rights would need to be assigned. This system would only apply to works and inventions developed by an AI where the involvement of a human being had been minimal. Consequently, there would be no legal grounds to assign moral rights or attribution rights, since no human being would have substantively participated in the creative process.[128] The AI would in fact be considered the "mind", which (at least for now) would not need to be morally rewarded. Furthermore, the proposed solution would not require granting legal personhood to AI, meaning that no rights or obligations would need to be recognised for an AI.

5.6. Conferred rights

The rights conferred by this *sui generis* system would depend on the output itself. This does not cause any specific problems, as the output is either an invention or an artistic, literary or musical work, which would likely be protected by copyright or patent if the inventor or the author had been a natural person.[129] It seems logical that the rights conferred to the owner would be the same as those conferred to the author/inventor – excepting only the moral rights. Therefore, an AI-generated work of art would confer to its owner the exclusive rights of reproduction, communication to the public and distribution, rental or lending right, public performance right and right of adaptation.[130]

As for AI-generated inventions, direct and indirect infringements would likely apply as they do to patentable subject matters.[131] In particular, the output of an AI would likely be a product[132] and therefore the owner would be entitled to make, dispose of, offer to dispose of, use, import or keep the product.[133]

5.7. Term of protection

Calculating the term of protection for AI-generated outcomes might be a difficult task. In fact, it has been observed that an AI is "potentially immortal",[134] as an AI is able to reprogram itself and change continually.[135]

On the one hand, it could be argued that an AI system is first and foremost a software system, albeit a complex one. For computer programs, a proposed term of protection in a hypothetical *sui generis* system would be significantly shorter than the monopoly granted by the typical IP rights. Software develops quickly and 5 years should be enough to recover investments.[136] On the other hand, it has been observed that an AI system is fed with data that could have a long lifetime. The data provided to an AI could be considered a collection of data and therefore protected under the database system, with a duration of 15 years.[137] However, some data might need to be updated constantly and the value of the trained AI would therefore be shorter.[138]

Both theories are reasonable, but some concerns could be mentioned. Even if an AI is seen a software system, in accordance with the first theory, the resulting complex outputs may not be ideally protected by a monopoly that only lasts 5 years. As regards the second theory, the complexity of the system may need constantly updated information and in similar cases the output could be the result of data gathered from the physical environment,[139] meaning that the data change with the surroundings. A monopoly that lasts for 20 years or more, as in the case of patent and copyright, has been observed to potentially have "a chilling effect on innovation".[140]

A feasible solution that is proposed here could be to grant protection for a period in between that offered to software and databases - in this instance, 10 years could be a suitable solution for both the artistic and innovative outputs of an AI. The fast pace of technological development could be seen as the factor that might justify a shorter period of protection, which would nevertheless be suitable for recovering investments. A shorter period of protection could be counterbalanced by creating an easier and less expensive way to access the protection system.[141]

The 10 years of protection for an AI-generated invention could start from the date when the application is filed (along the lines of the patent system),[142] while it, in the case of an AI-generated work, could start from the end of the calendar year in which the work was made (along the lines of the UK copyright system for computer-generated works).[143]

6. CONCLUSIONS

In order to take advantage of new technologies, investments need to be made. In order to secure such investments, a "clear and stable legal framework" is crucial.[144]

In light of the need to provide legal certainty and a predictable and reliable legal environment for AI, as expressed by the Commission,[145] the proposed *sui generis* system for AI-generated outputs – whether works of art or inventions – could be a suitable solution. The current IP systems for copyright and patents appear to be unable to provide legal stability, since many issues and implications related to AI-generated outputs remain unresolved. While those implications do not seem to preoccupy legal experts, it is arguable that in the long run, adjustments or an entirely new system would be needed. As leading figures of technology now call for public discussion about regulating AI,[146] the same attention should be given to AI in this specific field of law. Why wait until the situation evolves into "Artificial General Intelligence"?[147] Why not act now, with a system that can provide more legal certainty?

[128] Abbott, R. (2016) 'Hal the inventor: Big data and its use by artificial intelligence', p. 194.
[129] Thampapillai, D. (2019), p. 83.
[130] Bently, L., et al. (2018), pp. 141 ss.
[131] Ibid., pp. 637 ss.
[132] Abbott, R. (2016) 'I Think, Therefore I Invent: Creative Computers and the Future of Patent Law', p. 1086.
[133] Bently, L., et al. (2018), p. 638.
[134] Davies, C. R. (2011), p. 619.
[135] Ibid., p. 613.
[136] Toeniskoetter, S. B. (2005) 'Protection of Software Intellectual Property in Europe: An Alternative Sui Generis Approach'. *Intellectual Property Law Bulletin*, 10 (1), pp. 76, 78.
[137] Article 10 (1) Database Directive. See also Lauber-Rönsberg, A. and Hetmank S. (2019), p. 575.
[138] Credit to Fredrik Öhrström, lecturer at Stockholm University for the LL.M. Program in European Intellectual Property Law 2019/2020 in Software Patents and Free Software.
[139] Yanisky-Ravid, S. and Liu, X. (2017), pp. 2232, 2234.
[140] Modkova, A. and Vara, H. (2018), p. 16.
[141] Toeniskoetter, S. B. (2005), p. 80.
[142] Article 63 (1) EPC 2000.
[143] CDPA 1988, s. 12 (7).
[144] Commission Staff Working Document, 'Liability for emerging digital technologies', SWD (2018) 137 final, p. 2.
[145] Communication from the Commission 'Artificial Intelligence for Europe', COM(2018) 237 final, p. 15.
[146] Kontzer, T. (2015) 'Should We Truly Be Afraid of . . . Robots? Hawking, Gates, Musk Worry Artificial Intelligence Could One Day Eclipse the Human Variety, Then All Bets are Off'. *Investor's Business Daily* https://advance-lexis-com.ezp.sub.su.se/api/document?collection=news&id=urn:contentItem:5FH6-84D1-JCBB-K4JC-00000-00&context=1516831 (accessed on 9 April 2020).
[147] Artificial General Intelligence (AGI) refers to "a computer able to perform any intellectual task a person could [...]", Abbott, R. (2019) 'Everything is Obvious', p. 4.

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Inclusive Rights of Copyleft

A study on the scope of the free and open source software licence in a European context

By Saar Hoek

ABSTRACT

The current legal climate does not yet provide sufficient clarity on the workings, limits and rights conferred through licences granted on Free Open Source Software (FOSS). Generally, copyright is accepted as applying to FOSS and therefore the granted licence; by contrast, whether patents on the computer implemented invention (CII) encompassed in the software are implicitly licensed as well, is less clear. In terms of copyright, this article will examine the lack of clarity and unison concerning certain definitions in the most commonly used licenses, including the scope of the concepts of "distribution" and "derivative" work with GNU's General Public License (GPL) as a guideline. Patent inclusion within the grant will be set out against the nature of patent protection within the field; as well as complications as concerned implied license grants or the lack thereof.

1. COPYLEFT: THE ORIGIN STORY

1.1. Protecting Software

1.1.1. Copyright: Software as a Literary Work

The classic method of intellectual property protection for software is copyright. The choice of copyright originates in the 1980s. Initially, the World Intellectual Property Organization (WIPO) intended to create a *sui generis* protection for software, but this project was abandoned in 1985.[1] While software is mostly functional in nature, patents could not be applied to computer programs at the time in both the United States (US) and Europe, as their respective laws forbade it.[2] Furthermore, the procedure to acquire a patent is lengthy and quite complicated and a more accessible protection was needed. Copyright was the most suitable solution.

In the European Union (EU), this was codified in 1991 in the Software Directive '91[3], and adjusted in the 2009 Software Directive[4]. This text mandated that the European countries would henceforth protect computer programs (in this case meaning the actual code) as 'literary works' in line with the Berne Convention.[5] There are some issues with the choice of copyright for software protection, as software differs greatly from the subject matter that copyright was drafted to protect.

The first issue is with the protection term. A piece of code will automatically be protected for the life of the author plus seventy years.[6] Code is functional and can be paramount to progression in software development. To protect such a work with a monopoly that can last for over a century, in a field where a year is a long time in terms of developments, seems excessive.

Second, software developers write code to serve a purpose. A computer program is a process; it performs a task. Neither the performance nor the task are protected by copyright, just the source code as it is written, as if it were a novel rather than a kind of equipment. This poses real problems in the protection of a work. If an idea for an app is stolen and the exact same app is built using different code, there is nothing the author can do.

In addition, there is an issue of national sovereignty. Although the Software Directive does set out the general scope of protection in the EU, there is no regulation governing copyright. In addition, most licences used on FOSS originate in the US. These facts and the resulting interpretations make copyright for software complicated and impractical, considering its international nature.

Lastly, it is profoundly challenging to ascertain when something is copied code. How many changes must be made for a code to be considered independent, when the change of a single symbol can make a huge difference in the functionality of the software? Certainty regarding permissible actions is crucial when utilising free and open source code, as it will be incorporated into a final product and could pose substantial problems in terms of infringement if handled incorrectly. When using software distributed under a free and open source licence, the question remains to what extent something has to be changed to no longer be seen as a copy or unauthorised utilisation of said software. This issue will be the focus of this article, focusing on copyright and more specifically on what constitutes a derivative work and what is meant by distribution under a FOSS licence.

1.1.2. CIIs and Patent Protection

As mentioned, software has historically been excluded from patentability in many legislations. Under Article 52(2)(c) European Patent Convention (EPC), this is still largely the case, mandating that programs for computers, as such, are is not patentable. However, neither is the functionality of a program protec-table by copyright. This leaves a gap where protection is needed for the solution that a computer program can provide to a technical problem, without protecting the program as such. The European Patent Office (EPO) refers to this possibility, where the invention is formulated not as a computer program but as a solution whose performance is dependent on a computer (program), as Computer-Implemented Invention (CII).[7] Examples of this may include Graphical User Interface (UI)[8] Inventions, Data Transmission Inventions and Cloud Computing Technology Inventions.[9] The patentability of CIIs has been possible since the *Vicom* case, where the EPO Board of Appeal first decided that although a computer program as a mathematical method cannot be protected, this does not preclude the patentability of a technical process which is carried out under the control of a program[10]. As will be discussed next, this results in an oxymoron.

CIIs are not as clear as one might have hoped. The concept refers to an invention that can be implemented through software, hardware, or both. This creates a somewhat paradoxical loop within the law, because although patents on software are unlawful, it is possible to get a patent on a CII that is implemented solely in software. However, if this was not allowed, CIIs which were implemented in hardware but which *could* possibly be embodied in software would also unavoidably be excluded.[11] Whether this is desirable is a matter unto itself, but it was certainly not the intention behind the law. In a report for the European Commission, the authors even went so far as to say that:

> *'In sum, the term CII is flawed at an ontological level. This may be a confusing conclusion, but it is helpful to prevent even more confusion.'*[12]

A patent grant thus does not result in a cumulative protection with copyright, but instead covers other subject-matter, upon which disparate acts will infringe, even though both subject-matters may be exclusively encompassed by the same software. In the words of the European Commission:

> *'A patent protects an invention as delimited by the patent claims which determine the extent of the protection conferred. Thus, the holder of a patent for a computer implemented invention has the right to prevent third parties from using any software which implements his invention (as defined by the patent claims). This principle holds even though various ways might be found to achieve this using programs whose source or object code is different from each other and which might be protected in parallel by independent copyrights which would not mutually infringe each other.'*[13]

1 Annette Kur, Thomas Dreier, European Intellectual Property Law, (Edward Elgar Publishing Ltd. 2013), 250.

2 Art. 52(2)(c) and 52(3) Convention on the Grant of European Patents of 5 October 1973 (hereinafter EPC).

3 Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs (hereinafter Software Directive '91).

4 Council Directive 2009/24/EC of 23 April 2009 on the legal protection of computer programs (hereinafter Software Directive).

5 Berne Convention for the Protection of Literary and Artistic Works of 9 September 1886 (hereinafter Berne Convention).

6 Council Directive 93/98/EEC of 29 October 1993 harmonising the term of protection of copyright and certain related rights (hereinafter Copyright Duration Directive), Art. 1.

7 EPO Guidelines for Examination, 'Index for Computer-Implemented Inventions' (EPO, 6 March 2017) https://www.epo.org/law-practice/legal-texts/guidelines/cii-index.html accessed 6 December 2020.

8 The user interface is the component of the operating system that enables user interaction. It is the manner in which the software is shown to the user. This might be expressed in the graphical icons for an app or the manner in which the mouse pointer moves on your laptop.

9 European Commission, The Trends and Current Practices in the Area of Patentability of Computer Implemented Inventions within the E.U. and the U.S. (European Union 2016), 10.

10 T 208/84 (computer-related invention/VICOM) of 15.71986 , EP:BA:1986:T020884.19860715, Reasons for the Decision, p. 6.

11 European Commission, Study of the Effects of Allowing Patent Claims for Computer-Implemented Inventions (European Union 2008), 6.

12 Ibid. 7.

13 Proposal for a Directive of the European Parliament and of the Council on the patentability of computer-implemented inventions, rec. 22–23 (as cited in Kur (n 1) 138).

It should be noted that the above quote is taken from a proposed directive on CII, which was rejected. National law is therefore not harmonised with what is stated therein. In fact, to make matters worse, each Member State's national law governs the post-grant life of a patent there is no Unitary Patent (yet). Even if the requirements for patentability are substantially similar, interpretations and principles conceived through a body of national case law in infringement and invalidity cases, for example, have resulted in national approaches that may not be entirely consistent with one another or with the Position of the.[14] This can be exemplified by the principle of technical character. Right now, codification of this exists only in form of the phrase 'all fields of technology' in Article 52(1) EPC, which sets out the substantive criteria for patentability. However, what exactly this means is unclear, as the EPO has used miscellaneous explanations and various terms, including technical effect, technical contribution and further technical effect.[15] We can identify the resulting uncertainty and divergence in the fact that the principle is diligently used in German law, where it originates, whereas a United Kingdom (UK) court has dismissed the argument on technical character as 'something of a counsel of desperation'.[16]

Though Article 52(2)(c) EPC excludes software from patentability, this exclusion is to be read narrowly. The EPO has explained it as such:

> *'A computer program product is not excluded from patentability under Article 52(2) and (3) EPC if, when it is run on a computer, it produces a further technical effect which goes beyond the "normal" physical interactions between program (software) and computer (hardware).'*[17]

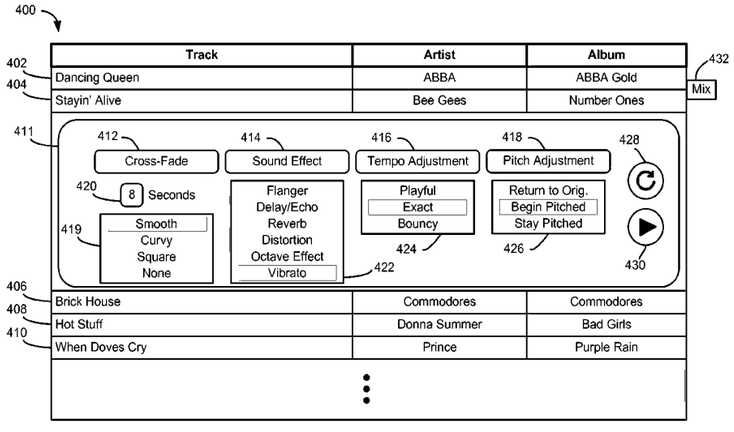
As already mentioned, a proposed directive on the protection of CIIs was rejected. Presently, patent protection is still based solely on the EPC, as well as national laws, revised for compliance with the EPC in light of EPO practice.[18] The lack of harmonised EU law on the patentability of computer programrelated innovation has contributed to the current situation in which there is no clear delineation between a computer program (as such) which may not be protected by a patent and a patentable CII.[19] To avoid the exclusion in in Art. 52(2) EPC and corresponding national provisions, patent applications are often worded in a cryptic manner.

This, in turn, results in a few issues. First, because there is no true classification for patents such as these, it is difficult – even nearly impossible – to find them effectively and thereby ascertain the state of the art.[21] This means that granted patents relevant as prior art might often be overlooked, even in case of diligent research, and the amount of patents might therefore increase unjustly, thereby lowering the quality of patents. Another result of ineffective searching is that it is difficult to ascertain whether a certain type of conduct infringes upon a certain patent, if said patent is hard to find. Lastly, because patents protect and therefore formulate an idea rather than an expression, it is not required that source code is disclosed. This is curious, as Article 100(b) EPC clearly states that any patent application must disclose the invention in such a manner that a person skilled in the art might carry it out. The solution in such a patent is often entirely encrypted in computer code, and its absence in a patent specification would make it a burdensome task for the person skilled in the art to carry out the invention. Additionally, one might argue that due to this type of reasoning, the patents granted for CIIs might be unduly broad, and thereby not fulfilling the requirements of inventive step in Article 56 EPC.[22] In fact, in the case of software-implemented inventions, it is often not a specific solution that has been granted a patent but rather a specific problem, because the expression – the source code, the computer program itself, which enacts the solution – is excluded from patentability.[23]

Figure 1.
A patent application filed by Spotify for which a patent was granted. The abstract explains the process which is enacted by a computer. This invention is entirely embodied in software.[20]

(54) **Crowd-sourcing of automatic music remix rules**

(57) Systems and methods for mixing music are disclosed. Audio mix information is received from a plurality of users. Mix rules are determined from the audio mix information from the plurality of users, wherein the mix rules include a first mix rule associated with a first audio item. The first mix rule relates to an overlap of the first audio item with another audio item. The first mix rule is made available to one or more clients. In some implementations, making the first mix rule available to the one or more clients includes transmitting, to the first client, information enabling the first client to playback a transition (e.g. crosss-fading) and a musical effect (e.g. reverberation) between the first audio item and a second audio item in accordance with the first mix rule.



1.2. Conception of Copyleft

1.2.1. From Sharing to Selling

> *'When I started working at the MIT Artificial Intelligence Lab in 1971, I became part of a software-sharing community that had existed for many years. Sharing of software was not limited to our particular community; it is as old as computers, just as sharing of recipes is as old as cooking.'*[24]
>
> – Richard Stallman

Historically, source code has been provided along with whatever program it represented. Indeed, back at the beginning of software development, the attitude towards its identity and accessibility was built upon long traditions of collaboration and openness.[25] These attitudes existed because software was seen as a means to an end – the end being hardware and software being a mere necessity to make it function, and not possessing any independent value. One contributing reason was that the system of updating and tweaking technology was very different from the one-click-culture that we enjoy today. As a user of "primitive" technology (pre-1980s), it was important that the source code to software was freely accessible as it might be necessary to update and modify it yourself in order to support new hardware or add features.[26] Personal computers had not entered the landscape yet and computing was still intrinsically a thing of science and education. As this went on for years, it created a norm that was hard to depart from, and it can be argued that the principle of free access is still present among programmers.

However, a shift occurred in the 1980s. Software started being pursued as a business, which meant that the willingness to share proprietary source code decreased significantly. For the people working in software, this was a deeply frustrating experience. Not only did the amount of easily accessible work material decrease; they were also suddenly subject to non-disclosure agreements and lawsuits where the culture used to be open collaboration. One of these frustrated programmers was Robert Stallman. In his own words:

> *'This meant that the first step in using a computer was to promise not to help your neighbour. A cooperating community was forbidden. The rule made by the owners of proprietary software was, "If you share with your neighbour, you are a pirate. If you want any changes, beg us to make them."'*[27]

1.2.2. Copyleft and Licence Types

To combat increasing proprietary approaches and keep software free (as in 'free speech', not as in free from cost), Stallman founded the Free Software Foundation (FSF), under which he started developing a new operating system called "GNU's Not Unix!" (GNU) and conceived the concept of copyleft. The idea is based on copyright, but takes it in reverse. Instead of using it as a means to privatise and monopolise a work, it ensures that the work remains in the public domain. Under copyleft, one is free to use, distribute, modify and copy the program – but one is *not* allowed to add subsequent restrictions. What is free must remain so; if a copylefted program is incorporated into another program, the source code must be included, including any independently made modifications or additions.[28]

[14] European Commission (n 11) 11.
[15] Ibid. 15.
[16] CFPH LLC [2005] EWHC 1589 Pat. [2006], R.P.C. 5.
[17] T-1173/97 (Computer program product/IBM) of 1.71998, , EP:BA:1998:T117397.19980701, Reasons for the Decision, p. 2.3-2.4.
[18] Anna Haapanen, Free and Open Source Software Licensing and the Mystery of Licensor's Patents (IPR University Centre, 2017), 73.
[19] Kur (n 1) 139–144.
[20] Spotify AB, 'Crowd-sourcing of automatic music remix rules', EP2808870A1, granted 16 March 2016.
[21] Directorate-General for Internal Policies of the European Parliament, Legal Aspects of Open Source Software (Policy Department C: Citizen's Rights and Constitutional Affairs Workshop, 2013), 45.
[22] T 939/92 (Triazoles) of 12.91995, , EP:BA:1995:T093992.19950912, Reasons for the Decision, p. 2.4.2.
[23] European Parliament (n 22) 45.
[24] Robert Stallman, Free Software, Free Society (FSF 2002), 23.
[25] Ibid. 1–3.
[26] Ibid 1.
[27] Stallman (n 24) 18.
[28] GNU's Not Unix, 'Frequently Asked Questions about the GNU licenses' (GNU Operating Systems, updated 9 February 2019) https://www.gnu.org/licenses/gpl-faq.html accessed 9 March 2020.

Therein lies the distinction between free software and copyleft. A licensed program can satisfy the requirements for the former but not for the latter, e.g., when a piece of code can be freely included in a proprietary program *without* the condition that its source code must be included. Such FOSS licences are generally referred to as permissive licences. The difference boils down to that the user further along the distribution chain, who obtained the initial open source software only through its incorporation in other software, is still subject to any original copyleft licence. Permissive licences entail no such restrictions. The copyleft licence is inherently connected to the software and travels with it, while permissive licences can be replaced.

Stallman drafted his copyleft ideas in the General Public License (GPL), which is widely used to this day. Other popular modules include the MIT licence and the Apache licence, both permissive licences.[29] The Open Source Initiative (OSI), which is an organisation that approves FOSS licences, is also noteworthy. They opt not to use the term 'free software' but rather 'open source', because – though they have similar goals and history as the FSF – their foundation is pragmatic and business-oriented, rather than ethical in nature, and they have felt that the term 'free' has too many moral connotations.[30] Here, both terms will be used synonymously.

1.2.3. Compatibility

With any licence, a large amount of freedom is granted to its drafter. This has resulted in a multitude of free software licences, not all of which are compatible with each other.[31] However, unlike in most fields where licences are used, the field of software is highly collaborative and strangers across the globe can – and will – easily make use of its subject-matter. The chain of distribution and adaptation is almost impossible to track, which has made it difficult to keep track of how the licences work in practice, how they affect each other, how an American-written copy-pasted licence applies in an EU state and so forth. A study done in 2013 suggested that many GitHub[32] users did not license their source code at all.[33] The situation has grown so complex that it is very hard to comprehend or get an overview of. For the sake of clarity, this article will adopt the GPL as connecting theme throughout. This means the focus will be on copyleft licences and the licences compatible with GPL. The reason it that, a copyleft licence poses strict obligations on its licensee, such as the publishing of source code, which a permissive licence does not. This means that disputes and legal uncertainties regarding its scope are more consequential. The GPL is the obvious choice, as it is widely used, widely discussed, has very strict obligations and is the original copyleft licence.

1.3. The European Union

1.3.1. Legal Basis

It may seem counterintuitive that a contractual solution originating in US Copyright Law can function in European countries (and it does not completely, see section 1.3.3.), but because it is a contract it does not supersede copyright law. Rather, it is an overlying agreement, which grants the user and proprietor certain rights and obligations. Any infringement will be settled under the relevant national law. In fact, national legislation varies quite a bit between the EU member states, as illustrated in Figure 2 below. Note that at the time of the investigation – 2016 – there were still many countries in which no case law existed on FOSS or alternative licences (such as the Creative Commons licence). In the countries that did have some reported case law, this usually encompassed only one or two cases.[34]

In the absence of extensive case law, an analysis of the terms used in most copyleft licences will be helpful to get a picture of what happens when FOSS is licensed. In Figure 2, under the question 4, it is noted that eleven EU states have jurisdiction-specific standard licences for FOSS. In all these cases, the licence in question is the so-called European Union Public License (EUPL) for FOSS.[36]

[29] Ayala Goldstein, 'Top 10 Open Source Licenses in 2018: Trends and Predictions' (White Source Software, 13 December 2018) https://resources.whitesourcesoftware.com/blog-whitesource/top-open-source-licenses-trends-and-predictions accessed 10 March 2020.

[30] Michael Tierman, 'History of the OSI' (OSI, 19 September 2006) https://opensource.org/history accessed 9 March 2020.

[31] GNU operating system, 'Various Licenses and Comments about Them' (GNU Operating System, 13 March 2017) https://www.gnu.org/licenses/license-list.en.html accessed 9 March 2020.

[32] The most commonly used website where programmers up- and download freely accessible source code.

[33] Aaron Williamson, Licensing of Software on GitHub: A Quantitative Analysis, Linux Collaboration Summit, 2013.

[34] Axel Metzger, Free and Open Source Software (FOSS) and Other Alternative Licensing Models (Springer, 2016), 7–12.

[35] Metzger (n 35) 6.

[36] Metzger (n 35) 12.

[37] Patrice-Emmanuel Schmitz, 'The European Public Licence (EUPL)' [2013] 5(2) International Free and Open Source Law Review, 121.

[38] Software as a service means that a program is not downloaded or bought on an external disc or drive, but rather functions through a cloud computing system and is accessed via the internet. The Citrix web environment is an example.

[39] As most European courts operate on a civil law system rather than common law, a contract is a little less free. For example, a general exception to liability is not accepted in most European courts.

[40] Schmitz (n 37) 122.

[41] EUPLv1.1, European Union Public Licence version 1.1 (European Commission, January 2007) https://joinup.ec.europa.eu/sites/default/files/custom-page/attachment/eupl1.1.-licence-en_0.pdf; European Union Public Licence version 1.2 (European Commission, May 2017) https://joinup.ec.europa.eu/sites/default/files/custom-page/attachment/eupl_v1.2_en.pdf accessed 9 March 2020.

[42] Schmitz (n 37) 122.

[43] Javier Casares, 'EUPL: European Union Public Licence' (EUPL, updated 27 June 2017) www.eupl.eu accessed 9 March 2020.

Figure 2.
Additional information on national provisions and case law regarding FOSS and alternative licensing in EU Member States and UK.[35]

	Yes	No	Yes Countries	No Countries
1. Special provisions on license contracts?	12	5	Belgium, Croatia, Czech Republic, France, Germany, Greece, Hungary, Italy, Poland, Portugal, Romania, Spain	Cyprus, Denmark, Finland, Netherlands, UK
2. Special provisions on FOSS or other alternative licenses?	5	12	Czech Republic, France, Germany, Italy, Portugal	Belgium, Croatia, Cyprus, Denmark, Finland, Greece, Hungary, Netherlands, Poland, Portugal, Romania, UK
3. Case law on FOSS or other alternative licenses?	6	11	Belgium, France, Germany, Italy, Netherlands, Spain	Croatia, Czech Republic, Cyprus, Denmark, Finland, Greece, Hungary, Poland, Portugal, Romania, UK
4. Jurisdiction-specific standard licenses for FOSS or other jurisdiction-specific licensing schemes?	11	6	Belgium, Czech Republic, Finland, France, Germany, Italy, Netherlands, Portugal, Romania, Spain, UK	Croatia, Cyprus, Denmark, Greece, Hungary, Poland

1.3.2. European Union Public Licence

In the early 2000s, the European Commission started to review the advantages of adopting a licence for open source software. This occurred mainly in the context of programs meant to improve interoperability (within EU institutions and the public sector) and in relation to the development of the information society.[37] The Commission first set out the eight conditions the chosen licence would have to encompass, namely:

1. Grant *all* FOSS freedoms;
2. Ensure protection from exclusive software appropriations (i.e., be a copyleft licence);
3. Have working value in *all* official EU languages (so as to avoid the need for sworn translators);
4. Conform with EU copyright law and terminology;
5. Include the 'communications to the public' right, including web distribution and software as a service[38];
6. Clarify applicable law and competent court;
7. Have an approach to warranties and liabilities that conforms with case law[39];
8. Be comprehensive and pragmatic, avoid complexity and excessive length.[40]

Research found that no existing licence complied with four of these requirements (3, 4, 6 and 7). Already, this reveals something about the GPL in a European context, as it was one of the licences considered, and therefore apparently did not comply with the requirements that the Commission deemed necessary – most importantly requirement 4.

It was decided that the best option was to create a new copyleft licence, which came to be the EUPL[41]. Version 1.1 was released in January of 2009 and accepted – in all its 22 languages – by the OSI in March of the same year.[42] It has grown popular primarily within governmental institutions and public service organisations, as many countries in the EU require that the local language be used at such institutions.

The licence is compatible with the GPL. However, keep in mind that this means that if the two licences are combined, the combined product has to be licensed under the GPL, as this is one of the main requirements of the GPL.[43] The purpose of the EUPL was never to compete with existing licences, but rather to facilitate the use of FOSS in European public governance. It is therefore not useful to do a side-by-side comparison of the EUPL and the GPL. However, because one of the main purposes of the EUPL was to make a licence which would be compatible with EU law, terminology and case law, it will be useful to use it as guidance to see how best to interpret the GPL (and other copyleft licences), for example as regards liability.

1.3.3. Liability and Warranty

It is worth mentioning that most FOSS licences contain an absolute disclaimer on warranty and liability. An example is seen in the following, taken from the MIT licence, which is currently the most popular licence on GitHub:[44]

> *'The software is provided "as is", without warranty of any kind, express or implied, including but not limited to the warranties of merchantability, fitness for a particular purpose and noninfringement. In no event shall the authors or copyright holders be liable for any claim, damages or other liability, whether in an action of contract, tort or otherwise, arising from, out of or in connection with the software or the use or other dealings in the software.'*[45]

This is a typical example of a clause which is obviously derived from common law. Such a clause will not hold up in most courts of the EU, as shown in Figure 3. Even for the Member States which are shown in the 'yes' column, validity will not be absolute. For Belgium and Finland, liability and warranty in case of gross negligence or wilful acts cannot be excluded. For the Netherlands, Croatia and Finland, such claims may be void in cases concerning consumers.[46] Most Member States even have specific mandatory provisions prohibiting such claims.[47] In court, such a provision will then be declared void, meaning the author could be liable for damages. However, assigning liability might be difficult in many cases, due to the interoperability of software; a failure might be due to connected software or hardware.[48]

In the EUPL v1.2, the liability clause is rephrased as follows:

> *'Except in the cases of wilful misconduct or damages directly caused to natural persons, the Licensor will in no event be liable for any direct or indirect, material or moral, damages of any kind, arising out of the Licence or of the use of the Work, including without limitation, damages for loss of goodwill, work stoppage, computer failure or malfunction, loss of data or any commercial damage, even if the Licensor has been advised of the possibility of such damage. However, the Licensor will be liable under statutory product liability laws as far such laws apply to the Work.'*

Such a clause fits the civil law of most EU Member States much better, and it is likely that most liability disclaimers will be interpreted in this way, even if they expressly exclude all liability. Therefore, authors and distributors need to be cautious when locating or conducting business in one of these territories, because the risk for liability might be larger than assumed. Indeed, especially in most cases of wilful misconduct or gross negligence, liability cannot be avoided.

2. RELATIONSHIP COPYRIGHT AND FOSS

2.1. Rights Conferred

The OSI has established some general rules as to which rights have to be included in a copyleft licence. Although there are also many non-OSI certified licences, the rules are still generally adhered to. Even if this were not the case, the most commonly used licences, such as the GPL, examined here, have been approved. Thus, for the purposes of this article, these rights provide excellent guidance.[50]

The rights required by the Open Source Definition (OSD) are: to use, reproduce, modify, communicate and re-distribute the work.[51] These refer, of course, to the rights granted to the author of the work copyrighted in the first place, under the Berne Convention.[52] For software in the EU, this has been established in Article 4 of the Software Directive, with which national legislation will have been harmonised. Use, reproduction, modification and communication will not be discussed herein. Use and modification are quite straightforward and do not require elaboration within this context. Reproduction and communication are interesting in a software context, but issues such as piracy and the communication of paid content on a free site, for instance, are not particular to or larger in copyleft licences as compared with other copyright issues and thus will fall outside the scope of this article.

Figure 3.
Validity of exclusion of any liability and warranty claims in some EU Member States.[49]

	Yes	No
1. Is a disclaimer excluding any warranty and liability (such as often occurs in FOSS) valid under the contract law principles of national jurisdiction?	Belgium, Croatia, Denmark, Finland, Netherlands	Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Romania, Spain
2. Is it of relevance that the license grant of FOSS and other alternative licensing schemes is not bound to any monetary consideration?	Denmark, Netherlands, Spain	Belgium, Croatia, Czech Republic, Germany, Hungary, Italy, Romania

2.2. Distribution

2.2.1. Accessibility Requirement

Distribution is different from the other rights because it is the only condition within a copyleft licence that imposes an obligation on the user. Namely that what is free must remain free. It is not the particularity of distribution in and of itself that is the key component. Rather, it has to do with the fact that any software licensed under the GPL must remain licensed under the GPL.[53] Therefore, if a company uses any software licensed in this way, said software must be published within their own product. This is the case even in a compiled binary program made up of many files, if the vast majority are licensed under a permissive licence and only one is under a copyleft licence. Permissive licences such as the BSD licence[54] allow sub-licensing and defer to the GPL when used in combination. This practice is referred to as deep-licensing.

The requirement which forces free accessibility is only complicated *when* distributing, due to companies wanting to sell – and therefore to distribute – finished products that contain some type of copyleft-licensed software. In case of modification or reproduction, no such obligation arises. Notice can be provided in a multitude of ways. For apps and other 'clean software', it is common that there is a section called 'Third Party Software'[55] or something similar. For hardware running GPL software, this is a bit more complex – but one can implement a notice in the UI or provide notice in the accompanying documentation.[56]

A company should make certain that these notices are diligently provided, because if FOSS licensed under the GPL is used within proprietary soft- or hardware and a licensee has failed to license the combined product under the GPL and not provided due credit, that is infringement of the licence, which means liability for copyright infringement.

2.2.2. Offer and Acceptance

In the EU member states, a licence agreement generally must adhere to the conditions of offer and acceptance.[57] The publishing of FOSS with a copyleft licence can certainly be accepted as constituting an offer. In the first paragraph of the GPLv2, this offer is subject to the condition that the licensee

> *'conspicuously and appropriately publish on each copy an appropriate copyright notice' as well as 'keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program'.*

Moreover, it is stated in the fifth paragraph that the act of modifying or running the program constitutes acceptance to these terms and conditions. What this means for the licensee is that if they distributes certain parts of FOSS that had been licensed under the GPLv2, they have accepted the licence terms. This will probably not be disputed by a licensee, because without acceptance there would not be a licence in the first place. If they have not distributed the work under the GPLv2, the terms of the offer are not adhered to and there will have been no licence agreement. In fact, the GPL has a clear termination notice:

> *'You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License.'*

In these cases, there will thus have been no right to use the software at all, which means that all uses of the software falling under any of the exclusive acts in Article 4 of the Software Directive – or in some cases Articles 2–4 of the InfoSoc Directive – even including temporary reproduction, such as loading, would constitute copyright infringement. In the case of the GPLv3, the licence may be re-instated if the error is rectified. However, failure to do so within 30 days of notice means that the licence will be permanently terminated.[58]

Distribution is particular, too, in the sense that it can be exhausted after a first sale or transfer of ownership pursuant to Article 4(2) of the Software Directive (see section 2.5 below).

44 Ben Balter, 'Open Source License Usage on GitHub.com' (GitHub, 9 March 2015) https://github.blog/2015-03-09-open-source-license-usage-on-github-com/ accessed 9 March 2020.
45 MIT licence, para. 3.
46 Metzger (n 35) 24.
47 See for example Czech Republic, Sec. 2898; France, Art. 1386-1 CC; Germany, Sec. 309 no. 8 lit. b and no. 7 CC.
48 Victoria Ho 'EU Software Liability Law Could Divide Open Source' (CNET, 11 June 2009) https://www.cnet.com/news/eu-software-liability-law-could-divide-open-source/ accessed 9 March 2020.
49 Metzger (n 35) 24.
50 OSI, 'Licenses by Name' (OSI, updated 2 May 2019) https://opensource.org/licenses/alphabetical accessed 9 March 2020.
51 Schmitz (n 37) 124.
52 Berne Convention Art. 6–13 pertaining to literary works.
53 GPLv2, section 0; GPLv3, section 2.
54 Berkeley Software Distribution License modified version (UC Berkeley, July 1999) https://opensource.org/licenses/BSD-3-Clause accessed 9 March 2020.
55 The Spotify app can serve as an example: you can find a list of their utilised copyleft-licensed software with the following steps: Your Library Settings About Third-party software.
56 Fredrik Öhrström, Software Patents and Free Software, (Stockholms Universitet Lecture, Stockholm, November 2018).
57 Haapanen (n 18) 89.
58 GPLv3, Art. 8(3).

2.3. Infringement Repercussions

The stakes in case of infringement are higher than one might think. It is natural to assume the risk is low because FOSS can often be acquired for free – in the legal sense of the word – so the damage would be nil in terms of actual financial loss on the author's part. However, in no EU country does this prevent the author from filing for damages if the licensee does not comply with the conditions of the licence. The interpretation of what those damages might be differs throughout the EU depending on national approaches. In some jurisdictions, such as Hungary, relevant loss might need to be proven, which could be problematic. Other countries, such as Denmark and Germany, might award damages based on fees for similar licences or for comparable software, in which case the amounts could be substantial.[59] When there are interests in the US, which is very possible considering the global nature of software, the damages could prove to be greater. An example can be seen in the 2017 US case in which CoKinetic Systems Corporation filed suit against Panasonic Avionics Corporation. Both companies are *global* players in the in-flight entertainment market. The claim was that Panasonic had wilfully violated the GPLv2 requirements by refusing to provide source code. Panasonic – holding a dominant market share of about 70% – was accused of attempting to monopolise the market. The damages sought exceeded $100 million.[60]

Interestingly, this case was settled in 2018. It is near impossible to find cases involving FOSS licence infringement that have not been settled. This is best explained by looking at the core of the conflict, which concerns not the monetary repercussions, but the assets. Recall that FOSS is essential in technological development and how widespread it is. Open source is used in creating almost every computer program. Institutions such as the European Commission, conglomerates like Microsoft, engineers, programmers, hardware manufacturers, research centres at universities, leaders in AI – *almost everyone uses open source*.[61] Reasons to use open source are myriad: it saves a lot of cost in development and due to its accessibility has been checked, bug-fixed and improved upon by more experts than a sole company could ever hope to afford. Reports have been released from all sectors explaining the need for the use of open source.[62]

Now imagine the effort, research, cost and time it takes to develop advanced technology. This is illustrated in the following quote Bill Joy, co-founder of Sun Microsystems, Inc., which has been bought by Oracle:

> *'We spent over a billion dollars a year in research. I can't just throw it all on the street.'*

Herein lies the crux of the matter. The technology does not just *have* worth, it is the worth. If a company is found to be in breach of the GPL or another copyleft licence, resulting in a lawsuit, the risk is having to give out any separately developed adjacent or encompassing source code – which most often is the source of profit. This risk arises because the GPLv3 speaks of 'covered work' and the GPLv2 and EUPL of 'derivative work'; it is unclear what the scope of these terms are and therefore how much of proprietary code would have to be released.[63] This is a daunting prospect and could undo millions in research and years in development.

There is also a risk that a product may need to be recalled. The Enforcement Directive states that in case of infringement of intellectual property, the Member States shall implement corrective measures including recall from commerce, definitive removal from commerce or destruction – on top of damages.[64] A company would not want to risk having to recall an entire product line, which might be the case if the software used is embedded into hardware. If we take the example of the Samsung Galaxy Note 7, the mobile device that had a battery which was prone to spontaneously exploding, recall of 2 million devices cost Samsung an estimated $5.3 billion.[65]

Lastly, for the party filing the lawsuit, there can be more business advantages from settling a case with the alleged infringing party, if the plaintiff agrees to provide them with valuable information and/or source code, which would result in a stronger market position for both parties than in case of public disclosure. It is a win-win for the parties, but a loss for open source.

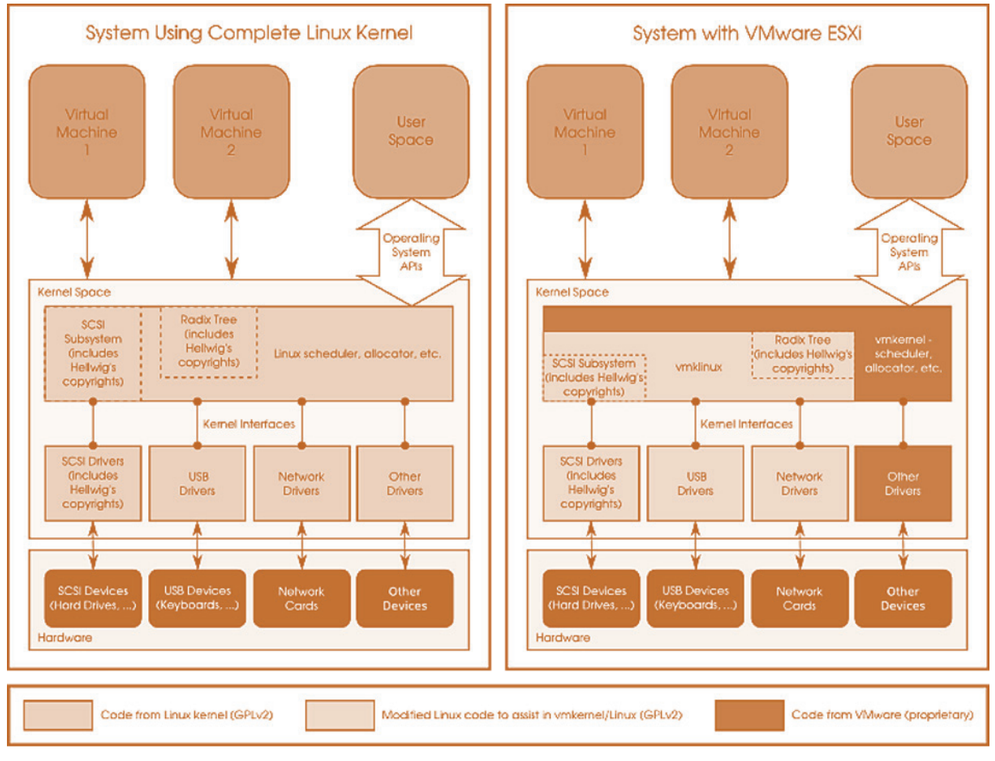
Due to the high risks of litigation, the unclarity of the terms and the benefits of settlement, very few cases have made it through to judicial rulings, meaning that many aspects are yet to be clarified. The situation has resulted in many companies being hesitant to use copylefted software – putting them at a disadvantage, because of the vast amount of resources that thereby become unavailable to them. This, in turn, affects the speed of technology development and the fairness of the playing field. Right now, hackers[66] suffer because they do not know which licence to use, end users suffer because they do not understand the terms of the licences, and companies suffer because they do not understand how open source might affect their intellectual property.[67] As illustrated above, what is meant by 'covered work', 'derivative work' and other similar terms is essential in relation to copyright.

2.4. Derivative Work

2.4.1. VMware v Hellwig

To get an idea of the complexity to be dealt with, let us examine an example: the case of *VMware v Hellwig*.[68] Linux was the proprietor of a kernel[69], licensed under the GPLv2. The opposing party, VMware, was the proprietor of another kernel, the vmkernel, as well as an API[70] called VMK API. Third parties were able to write drivers which would interact with the VMK API. For Linux drivers, an alternative compatibility option was offered through a loadable kernel called vmklinux. These three facets together, vmkernel, VMK API and vmklinux, were all encompassed in the ESXi OS.[71] vmklinux was licensed under the GPLv2, but the ESXi system was available only under a commercial licence.

Figure 4.
A system using the complete Linux kernel compared with a system with ESXi. The vmkernel is connected to the vmklinux and serves as a type of wrapper.[72]



59 Metzger (n 35) 38.

60 CoKinetic Systems, Corp. v Panasonic Avionics, Corp 1:17-cv-01527 (S.D.N.Y. 2017).

61 Öhrström (n 56).

62 See for example European Commission, Report on Open Source Licensing of Software Developed by the European Commission (hereinafter Commission FOSS Report), (European Union 2004), p. 4., and Sören Sonnenburg and others, The Need for Open Source in Machine Learning [2007] 8 Journal of Machine Learning Research, 2449–2453.

63 GPLv3, 5(c).

64 Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights [2004] OJ L 157 (hereinafter Enforcement Directive), Art. 10(1).

65 Maribel Lopez 'Samsung Explains Note 7 Battery Explosions, and Turns Crisis into Opportunity' (Forbes, 22 January 2017) https://www.forbes.com/sites/maribellopez/2017/01/22/samsung-reveals-cause-of-note-7-issue-turns-crisis-into-opportunity/#28f4f40624f1 accessed 9 March 2020.

66 Not intended in the sense of someone performing 'digital breaking-and-entering', but as a description of those creating and working with software etc.

67 Robert Gomulkiewicz 'De-Bugging Open Source Software Licensing' [2003] 64(1) University of Pittsburgh Law Review, 75.

68 Cristoph Helwig v VMware Global, Inc. Zweigniederlassung Deutschland, Hamburg District Court 310 O 89/15, 8 July 2016.

69 A kernel is the core of an operating system. It is the computer program that is the most essential to the entire system, exercising complete control. You can see it as the brain of an operating system.

70 Application Programming Interface. Every website on the internet is stored on a remote server. These are not mystical clouds of information, but actual tangible computers somewhere on the planet. If you type a website's URL into your browser, a request goes out to its computer, the "server". The part of the server that handles such requests and sends responses is the API. It is not the entire remote server, rather the part that your query interacts with.

71 Ieva Giedrimaite 'VMware GPL case is back in court—will we finally get some clarity on the meaning of "derivative work"?' (IPKat, 28 January 2019) http://ipkitten.blogspot.com/2019/01/vmware-gpl-case-is-back-in-courtwill-we.html accessed 9 March 2020.

72 Ibid.

The GPLv2, in term 0, states that:

> *"This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language."*

Further, in term 2(b), it states:

> *"You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License."*

The essential takeaway is that any derivative work must be licensed under the GPLv2. What, then, is meant by a derivative work? A work containing another work is usually seen as a derived work, but here two separate definitions have been used: 'that in whole or in part contains or is derived from [...]'. Does the licence mean to widen the term to encompass code and possibly even data or ideas that are otherwise not protected under copyright law? Unfortunately, the case in question has been dropped, in part because VMware promised to remove its allegedly Linux-derived technology from its OS. Thus, a definitive and prompt answer will not be forthcoming, but the case – which spanned over a decade – does illuminate the kinds of issues that arise. If a component of a software is licensed under the GPL, does that 'contaminate' the rest of the software? How much interaction is allowed? After how many modifications can a work be seen as independent?

2.4.2. Legal Definition

Regrettably, the EUPL does not offer much help. Its definition of derivative works is as follows:

> *'The works or software that could be created by the Licensee, based upon the Original Work or modifications thereof. This Licence does not define the extent of modification or dependence on the Original Work required in order to classify a work as a Derivative Work.'*

This comes down to that a work, to qualify as a derived work, must be derived from an original work. This is not a very helpful definition, especially given the fact that copyright in software development is unique, in that it is necessary to utilise already available work. Avoiding this would be like requiring that every car manufacturer reinvent the wheel every time a new model is created. Moreover, although it has been pushed into a characterisation as a literary work, software is still functional. This means that pieces of code work together to achieve a common goal. In the GPL explanatory notes, it is stated that an aggregation of a program is not protected under the GPL. In other words: when a piece of GPL-licensed software is used or modified in a program, in which it interacts with independently owned code, the licence does not apply to the resulting proprietary code. But where should the line be drawn between the pieces of software? The FSF GPL FAQ states that this depends on how 'intimate' two programs are.[73]

Of course, software giants want to make their products as accessible as possible. This means that they want to be able to process signals from already established software. This is especially true for software new to an established market, which can be exemplified by the failure of the Windows Phone OS.[74] The failure had little to do with the soft- or hardware of the phone itself, but rather that the new operating system (OS) was unable to process most apps written for the established Android and iPhone OSs. A user of Windows Phone would thus be unable to participate in the state of the art, resulting in the OS flopping. This issue could easily have been fixed by interoperability. VMware attempted to promote this by making its own software interoperable, but of course the software *need* to work intimately together. That could mean that the entire system would be a derivative work and the source code would have to be released in order to avoid copyright infringement and damage claims.

If we look to the Software Directive, it hints at what could constitute a derivative work in Article 4(1)(b), which states the exclusive right of an author to authorise:

> *'the translation, adaptation, arrangement and any other alteration of a computer program and the reproduction of the results thereof, without prejudice to the rights of the person who alters the program.'*

This is a broad interpretation, as it denotes any kind of alteration. Moreover, it is unclear what translation means in this context, as computer programs are not written in human language, but rather in source code. This could mean that a translation could be a reformulation of a program in another programming language. This would make the definition problematic, because that would mean that the idea or essence of the program is protected rather than the actual code – we have established that this is not protectable by copyright. The article does mention that the rights of the person who alters the program are unaffected, but this is not the case for a copyleft licence, which would impact precisely those rights – in the case of the GPL they are often waived and assigned to the FSF.

Traditionally, a derivative work is subject to two conditions: there must be a pre-existing work that it is based on and a separate original contribution thereto.[75] Like the Software Directive, neither national legislation nor the Berne Convention provide exhaustive lists on what can constitute a derivative work.[76] Rather, the lists provided serve as illustration. The pre-existing work is the copyleft-licensed FOSS that is used, and the separate original contribution is the work that a company may want to distribute. Looking to the teleological context of a law regulating derivative works and alterations, we can conclude that it generally concerns versions of a work that are directly connected to said work. A translation or cinematographic adaptation of an original literary work is clearly a version of that work, even if an original contribution is made to it and protected independently. Therefore, taking into account the nature of software, it is unlikely that the law meant to include any sort of interconnected but independent software as a derivative work, unless it was based on the precise code itself. Recital 15 of the Software Directive supports such a view:

> *'The unauthorised reproduction, translation, adaptation or transformation of the form of the code in which a copy of a computer program has been made available constitutes an infringement of the exclusive rights of the author. Nevertheless, circumstances may exist when such a reproduction of the code and translation of its form are indispensable to obtain the necessary information to achieve the interoperability of an independently created program with other programs. It has therefore to be considered that, in these limited circumstances only, performance of the acts of reproduction and translation by or on behalf of a person having a right to use a copy of the program is legitimate and compatible with fair practice and must therefore be deemed not to require the authorisation of the rightholder. An objective of this exception is to make it possible to connect all components of a computer system, including those of different manufacturers, so that they can work together. Such an exception to the author's exclusive rights may not be used in a way which prejudices the legitimate interests of the rightholder or which conflicts with a normal exploitation of the program.'*

Clearly, the aim of the Directive is to promote the software industry and provide solid legal protection for those investing in development. Additionally, a reading of the recitals reveals that the aim of the Directive is not to hinder any type of use of software which is necessary for interoperability. Any other interpretation would leave very little room for build-on technology and thereby stifle innovation.

2.4.3. Evaluating a Work

As for many legal issues, the question if a work is derivative should be evaluated on a case-by-case basis. However, the evidence points toward a more narrow interpretation than what was argued in the *VMware v Hellwig* case. To include an entire OS as a derivative work of a kernel because it attempts to be interoperable with said kernel would negate exactly such investments that the Software Directive and other copyright protection for computer programs set out to protect. Of course, if the code for the ESXi system had been substantially similar to the Linux OS, this would have been different. A derivative work in this context could be defined as a work based on an original work, in its entirety or in part, unless (a) the part concerned exists exclusively to aid in interoperability and promote a harmonised software environment; and (b) the connected software has been developed independently.

As this is a difficult evaluation to make, it might prove useful to erect a legal fiction of a person adept at analysing the similarity or intimacy between the original and the allegedly derived work. This would correspond to the 'person skilled in the art' in patent law, the 'average consumer' in trademark law and the 'informed user' in design law.[77] Naturally, copyright differs in nature, as it is an unregistered right.[78] However, due to its functional nature in the case of software, a parallel can be drawn specifically with the inventive step assessment in patent law. Here, it must be emphasised that it is the expression of the code that would be assessed, not the idea behind it or the functionality thereof. This is a distinction that such a person would have to comprehend. In patent law, the person skilled in the art has the twin tasks of preventing trivial inventions from being patented and preserving the patentability of meritorious ones.[79] When applied to a software environment – specifically in the context of copyleft licensing – such a person could have the mirrored twin tasks of preventing copycats while simultaneously safeguarding original contributions, notwithstanding the existing legal framework in regard to copyright protection for computer programs.

[73] Gomulkiewicz (n 67) 91.
[74] Vlad Savov, 'Windows Phone was a Glorious Failure' (The Verge, 10 October 2017) <https://www.theverge.com/2017/10/10/16452162/windows-phone-history-glorious-failure> accessed 9 March 2020.
[75] Ramū nas Birštonas, 'Derivative Works: Some Comparative Remarks from the European Copyright Law' [2013] 5 University of Warmia and Mazury Law Review, 67.
[76] Berne Convention, Art. 12; Ibid. 68.
[77] Naina Khanna and Jasmeet Gulati, 'Knowledge/Skill Standards of a "Person Skilled in Art": A Concern Less Visited' [2018] 17 John Marshall Intellectual Property Law Review, 590.
[78] Berne Convention Art. 5(2).
[79] Ibid. 591; EPO Guidelines for Examination, 'Part G: Patentability, 3. Person Skilled in the Art' (EPO, November 2019) <https://www.epo.org/law-practice/legal-texts/html/guidelines/e/g_vii_3.htm> accessed 9 March 2020.

2.5. Software Exhaustion

2.5.1. UsedSoft v Oracle

In 2012, the Court of Justice of the European Union (CJEU) made a decision in the landmark case *UsedSoft v Oracle*.[80] In this case, the CJEU laid down conditions in which the download of a computer program could constitute a first sale and thereby trigger exhaustion of distribution rights per Article 4(2) of the Software Direc-tive, even if the denominator of the agreement was a licence. Such an occurrence would constitute a first sale if the acquirer was allowed use, unrestricted in time and scope, of an object, tangible or intangible, in return for a payment that corresponded to economic value. This confirmed that intangible objects can be property and that a download can be seen as a sale.

How the findings fit in with FOSS is yet to be established. The dynamics of the agreement between the author and licensee (or possibly the first acquirer, if the title of first sale is indeed attributed) are slightly different. In the case of FOSS, the program is not readily provided as a down-load – rather, the code is provided. Moreover, more often than not, the software is available for free. The CJEU has placed emphasis on both the perpetuity of the agreement and a remuneration corresponding to economic value.[81] The former of these conditions would be fulfilled, as the very nature of FOSS is that a licensee is able to do with the software as they wish. The latter condition is not as certain, as there often is no renumeration. It could be argued that, because FOSS is available for free, its economic value is zero. However, the estimated value will likely exceed zero, as the wording of the CJEU is:

> *'which enables the copyright holder to obtain a remuneration equal to economic value'*

which implies that it is not the actual realisation of the remuneration that is of importance, but rather the mere possibility of obtaining remuneration.[82] The fact that the author has waived this and released the software free of charge would be inconsequential. That would mean that a FOSS licence could in fact constitute a first sale under Article 4(2) of the Software Directive. However, this has not been confirmed by the CJEU, so it remains to be seen whether or not and in what manner the definition of a sale might be applied to copyleft licences.

2.5.2. Consequences of Software Exhaustion for FOSS

Assuming that the contractual agreement when obtaining FOSS would qualify as a sale, this would have two important consequences for copyleft licences, both of which are destructive to their nature and continuing existence. First, recall that a copyleft licence requires that subsequent distribution of software, whether modified or not, be subject to the same licence it was initially acquired under. However, if the initial transaction is qualified as a sale, this obligation is no longer compatible with the agreement. In fact, the CJEU defined a sale as:

> *'an agreement by which a person, in return for payment, transfers to another person his rights of ownership in an item of tangible or intangible property belonging to him'.*[83]

This definition should be used uniformly and ubiquitously throughout the EU, as the legislation makes no reference to national legislation.[84] The definition given speaks of a complete transfer of rights of ownership. Therefore, the previous owner would be in no position to oblige the subsequent owner to further distribute the software only under certain circumstances. Indeed, the purchaser would hold the rights to the copy of the software and could distribute it further as they please, as any other situation would be incompatible with the nature of a sale.

Second, to promote the free movement of software, copyleft and permissive licences provide the user with the right to modify software and then distribute the modified software. However, in the case of a sale, such rights would also fall away. A purchaser is not allowed to modify and distribute the software without a licence from the copyright holder, because Article 4(2) Software Directive specifically and exclusively exhausts the right to distribution. Consequently, the further distribution of modified software without a licence would constitute copyright infringement of the rightholder's exclusive rights under Article 4(1)(b) Software Directive.[85]

In summary, if the licence in the case of FOSS is seen as a contract of sale, the interests of both the author of the software and those interested in utilising it in some manner would be adversely affected. The benefits of using FOSS would be eliminated. Fortunately, it seems unlikely that the exhaustion doctrine of the Software Directive will be applied in this manner. A careful reading of *UsedSoft* gives a clear requirement that the first acquirer would need to make their copy of the software unusable to trigger exhaustion and circumvent infringement.[86] Two issues come to mind when applying this to a FOSS situation. The first is whether the sample of source code would qualify as a copy at all. Since there is no real transfer of an object from one person to another, is the case for tangible things, and since *UsedSoft* applies also for a downloaded program, it is more likely that the publishing of FOSS in this case would be seen as a 'making available to the public' rather than 'distribution' and thus not trigger exhaustion. Second, whether or not a user has made their own copy unusable before a subsequent sale is impossible to guarantee in the case of FOSS. In *UsedSoft* or other proprietary software cases, the CJEU has granted that a copyright holder may make use of technical protective measures, such as product keys.[87] While this is difficult for digital goods in any case, it is in direct contradiction of the nature of freely available software. Granted, this is a narrow reading of *UsedSoft*, but such a view is supported by subsequent case law, which implies that this was indeed the intention of the CJEU.

2.5.3. A Nuanced View

In the 2016 case *Microsoft*, the question arose whether such exhaustion could extend to the backup copy that a first acquirer is allowed to reproduce per Article 5(2) of the Software Directive.[88] The conclusive answer from the CJEU was no: the backup copy cannot be sold and is meant purely for personal use, thus already providing a limit to the exhaustion principle. Moreover, it is emphasised in *UsedSoft* that the judgment only applied within the context of the Software Directive, which is lex specialis. Ironically, it is not always obvious whether or not software is governed by the Software Directive. In *Nintendo*, the CJEU stated that a video game was not governed by the Software Directive but rather by the InfoSoc Directive.[89] Although computer programs were the composing elements of the work in question, they were not its substance, as it was a complex work. This despite the fact that the creative elements, such as graphics and sound, were necessarily encrypted in computer language.[90] If combined with the judgement from *Art & Allposters*, in which the CJEU concluded that exhaustion under Article 4(2) of the InfoSoc Directive was limited to tangible objects, this limits the scope of *UsedSoft* even more.[91]

Late last year, the CJEU made a decision in the case *Tom Kabinet*, which concerned the retail of 'used' e-books.[92] This provided clarity on whether exhaustion applies in the 'distribution' of digital goods and whether sales of such qualified as distribution. The first of four questions posed addressed distribution directly:

> *1. Does the making available remotely by download of e-books (digital copies of books protected by copyright), for use during an unlimited period, against a price which enables the copyright holder to obtain remuneration corresponding to the economic value of the work, qualify as 'distribution' in the meaning of Article 4(1) of the InfoSoc Directive?*

The CJEU decided that sale of "second-hand" e-books does *not* qualify as distribution, but rather as communication to the public, which is not subject to exhaustion under Article 3(3) InfoSoc. The Court thus confirmed that the InfoSoc Directive enjoys a more narrow definition of distribution than the application of the Software Directive as seen in *UsedSoft*. This is consistent with the general principle of proportionality in EU law and case law alike.[93] Consider the CJEU's words in *Laserdisken*:

> *'[The principle of proportionality] requires that measures implemented through Community provisions be appropriate for attaining the objective pursued and must not go beyond what is necessary to achieve it.'*[94]

As concerns this objective, the CJEU often refers to recitals for the teleological interpretation of a work.[95] In the case of the InfoSoc Directive, these goals include preserving and developing creativity in the interests of authors and consumers alike, protecting intellectual property in order to guarantee an appropriate reward for the use of works and to provide the opportunity for satisfactory returns on investment, and providing a rigorous and effective system of protection to ensure that European cultural creativity and production receive the necessary resources and of safe-guarding the independence and dignity of artistic creators and performers.[96] These aims, applied to a FOSS environment, support that a proportional reading of the exhaustion doctrine would be a narrow one. Another interpretation would undermine open source itself and thereby the work of the author and enjoyment of the consumer/user.

The CJEU has been seen to consider situations in their entirety, whether they be situations of transfer, such as in the *UsedSoft* case – where the downloading of the program and the subsequent licence agreement (now sales

80 Judgment of 3 July 2012, UsedSoft, C-128/11, EU:C:2012:407.
81 Ibid. para. 45.
82 Ibid. para. 49.
83 Ibid. para. 42.
84 Ibid. para. 39.
85 Ken Moon, 'Where Does Free and Open Source Licensing Stand in Europe?' (Lexology, 20 August 2013) https://www.lexology.com/library/detail.aspx?g=91b10f02-8ae0-4e2d-bd20-4bba0e4fcfd6 accessed 9 March 2020.
86 UsedSoft (n 80) para. 70.
87 Ibid. para. 79.
88 Judgment of 12 October 2016, *Ranks and Vasiļevičs*, C-166/15, EU:C:2016:762, para. 43.
89 Judgment of 23 January 2014, Nintendo and Others Box, C-355/12, EU:C:2014:25, para. 23.
90 Ibid.
91 Judgment of 22 January 2015, Art & Allposters International, C-419/13, EU:C:2015:27, para. 40.
92 Judgment of 19 December 2019, Nederlands Uitgeversverbond and Groep Algemene Uitgevers, C-263/18, EU:C:2019:1111, para. 1–2.
93 Eleonora Rosati, Copyright and the Court of Justice of the European Union (Oxford University Press 2019), 47.
94 Judgment of 12 September 2006, Laserdisken, C-479/04, EU:C:2006:549, para. 53.
95 Rosati (n 93) 57.
96 Rec. 9–11 of the InfoSoc Directive.

agreement) were seen as an indivisible act – or considerations of copyright-protected works, such in the *Nintendo* case – where the video game was considered in its entirety, beyond its encrypted form. This indicates that FOSS will also be viewed broadly, which means that its characteristics might differ depending on if the Software Directive or the InfoSoc Directive is applied. Any type of program can be FOSS, whether it constitutes a simple function not exceeding a few rows of source code or an entire video game. Which of the directives applies will have to be evaluated on a case-by-case basis. Since *Tom Kabinet* and *UsedSoft* arrived at contrasting decisions, this question will likely be the main issue in future disputes.

3. PATENTS

3.1. Issues Specific to FOSS

With copyright, an author is almost certain that the copyright of an original work is entirely their own. This means that when external software is used, you can assume that you are not trespassing on another's rights, as long as you comply with the licence conditions.[97] While this, as discussed, is not as simple as it may sound, it is still a lot simpler than the issue of patents. The two conditions that an author may rely on – originality and compatibility – will likely not protect them in situations with patent protection. This is specifically in contrast to the principles of FOSS.

First, this is due to the area of protection of patents. In copyright, if two authors have the same clever idea, they are very likely to have come up with different implementations/codes, which means they are not at risk for infringing each other's works. However, a patent will only be granted to one of the creators for the technical idea, which means the other cannot effectively use his or hers (different) code in question without risking patent infringement. This situation is in stark contrast to the nature of FOSS, which wants to promote widespread development and improvement and – most importantly – freedom in regards to software use.

Second, many patent-licensing schemes are quite different from copyright licences. Often, they entail running royalties and the obligation to report sales, which are contradictory per se to the freedom to make copies, distribute and modify the software as one pleases. Only royalty-free patent licences are compatible with FOSS – not licences that adhere to the FRAND terms.[98]

In summary, the possibility of patent protection for these types of inventions is actually detrimental to open source, because even if a user of FOSS complies completely with the licence it is released under, they might still unknowingly be infringing a patent which is granted for the idea which the FOSS is an implementation of. In fact, not even the author of the software usually knows whether their code is an infringement of a patent, as they can be hard to find – authors usually simply depend on the knowledge that their work is original. An author might not have the means to acquire a licence after the fact and obviously the publishing of source code makes proving infringement very easy for the patent holder.[99]

3.2. Possible Solutions

3.2.1. Third Party Patent Holder

In the situation where the patent holder is not associated with the FOSS, there are a few things the software developer could do. It is often argued that a developer can invent around an existing patent, in such a manner that their implementation does not touch the patent area. However, patent protection is often too broad and can be interpreted to encompass an entire problem rather than a solution. This means that it matters very little in what way a solution is phrased, as any solution to the same problem will be an infringement. Moreover, the patent, due to the broad formulation, often includes standards. It would not be possible to use such a standard without acquiring a patent licence.[100]

Another solution could be to make use of either shimming[101] or plug-ins[102] in a modular system. These are both ways in which the patented part can be embedded into a separate, patent-licence compliant part which merely interacts with other parts, which can then remain FOSS-licensed. It is, so to speak, a separation of interacting parts. However, neither solution is optimal – for two reasons. First, this unnecessarily increases the complexity of a program, and second – and most importantly – the FOSS cannot then implement a patented standard, but merely make use of it. Thus, the more such patents are granted, the more FOSS would shrink.[103]

The best thing to hope for, which would leave intact the disparate intellectual property protections of copyright and patents while simultaneously respecting the nature of FOSS and even software as a whole, would be that pure software could not infringe upon a patent which is granted for a CII or another type of software-embedded invention,

[97] Ibid.
[98] ibid. 43.
[99] Arnoud Engelfriet, 'Octrooirisico's bij Open Source Software' (Ius Mentis, 6 November 2018) https://www.iusmentis.com/computerprogrammas/opensourcesoftware/octrooirisicos/ accessed 9 March 2020.
[100] European Parliament (n 21) 47.
[101] Traditionally, a shim refers to a thin sheet of metal which one might use to link together two not entirely compatible parts, by filling the gap when the width or breadth of one component does not match the other. In programming, its function is similar. It is usually an API which translates signals from one part into signals that another can process. It might also be used to connect a patent-protected part to a FOSS program.
[102] A component that adds a specific feature to an existing program. It exists separately from the program, but interacts with it. A patent-protected program may be embodied in a plug-in so that it can be added to another program.
[103] European Parliament (n 21) 46.
[104] T-1099/06 (Transgenic plants cells/MAX PLANCK) of 30.1.2008, ECLI:EP:-BA:2008:T109906.20080130, Reasons for the Decision, p. 1-6.
[105] European Parliament (n 21) 48.

because computer programs as such are excluded from protection. Though teleologically consistent with the EPC, this is an entirely uncertain conclusion, made more so by the national nature of patents. As yet, national courts have the exclusive jurisdiction in patent infringement matters under Article 1 EPC. Moreover, the EPO ruled in *Max Planck* that there is no principle of binding case law in these matters.[104] This means that in the current absence of a Unitary Patent or binding Union-level case law, these matters are up to the sovereign nations and interpretations might differ greatly.

3.2.2. Patent Provisions in Copyleft Licences

If the party that holds the patent, but not the author of the FOSS, is involved in the distribution chain there are more possibilities. One of them is enclosing a patent provision within the licence. Existing provisions concerning patents most commonly take one of two forms. These are retaliation clauses and express patent-licensing clauses. The former entails that if a patent holder who receives the FOSS further distributes a certain computer program and then requires any of the recipients or the author to obtain a patent licence for that same program, the FOSS licence is terminated. This would mean that the patent holder had no right to distribute the program in the first place. This means that if patent infringement is claimed, there will be retaliation in the form of a copyright infringement claim.[105] Presumably, however, the author of the program would not be affected by this, because they grant the licence and thus are not subject to the terms for a licensee. There is a possibility that the author would then pursue litigation against recipients of the copyleft licence, claiming patent infringement. Most likely, such conduct would be prohibited by law as misleading practice. However, this is not entirely certain and pursuing litigation would add further complexity to an already complex situation, which would not support FOSS. It would be best if such a risk were avoided altogether.

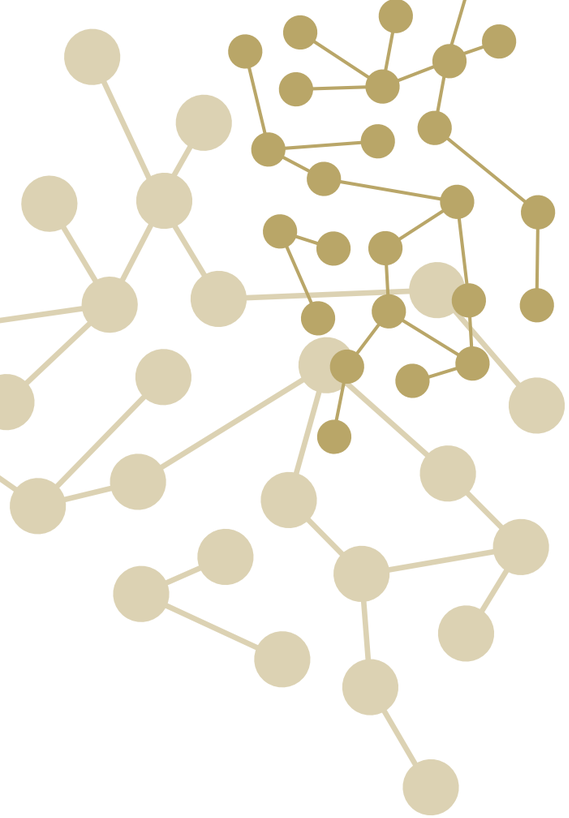
The other type of provision is the express patent clause. With the passing of time, more major FOSS licences have included a patent licence provision in their licence. Most often, this takes one of two forms. In the first, a patent licence is granted only in regards to the modifications that the patent holder has made to the program. Thus, another contribution in the same program, but not by the patent holder, might still trigger patent infringement. The MPLv2 includes such a clause in section 2.1., which states that:

> *Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:*
> *(2) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.*

Although this is helpful in the sense that it eliminates the risk of misleading conduct on the part of patent holders associated with the program, it still gives no guarantee to a licensee that they are not infringing upon any patents. Considering the nature of software and patents, it is not unimaginable that a contributor might modify the program and thereby infringe a claim of the mentioned patent which is not covered by such a clause.

A second form of patent licence, such as in the GPLv3, is broader still. It covers all patents on distributed code, regardless of whether the patent holder was a contributor or merely received and distributed the code. The phrasing in section 11 of the GPLv3 is as follows:

> *'Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.*
>
> *If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.'*



Here, the contributor is not only responsible for their own patents, but also for patents they know to be valid in the relevant country, effectively targeting cooperation between third party patent holders and contributors. Moreover, the patent holder does not merely grant the licence for their contributions, but for any contributions relevant to the work. This grants more protection to the licensee, but might also be an undue burden for a contributor. It is feasible that a contributor, especially one in a corporate capacity, might be the licensee of multiple CII patents. Carrying the burden of downstream infringements on these patents would be a heavy responsibility. However, the licence does emphasise that the contributor has to 'have actual knowledge' than such downstream conduct would infringe any such patents. In the EU, this would probably translate to application of the test of the reasonable person, who knows or should have known.

3.2.3. Implied Patent Licences

Not all FOSS licences include express patent provisions – this is the case for most older versions. Here, the question arises whether such a licence should be taken to be implicit. In common law systems, this is the doctrine of implied licence. Many civil law systems of Europe have not established similar legal doctrine, but the following can be assumed to apply in analogy to the principles of silent or tacit agreement.[106] Naturally, whether or not this applies depends heavily on the licence itself and how it is formulated, but to show how this might be analysed, the BSD licence (which is permissive) and the GPLv2 will be used as examples.

In the BSD, there is no mention of a patent licence. However, it should also be noted that there is no express statement indicating that the licence is granted (only) under copyright. The same holds true for the MIT licence and the GPLv2, although the latter does limit the activities covered to distribution, modification and copying, which are associated with copyright.[107] Thus, the absence of explicit mentioning does not necessarily warrant the conclusion that patent rights are excluded from the licence. In fact, given that the right to 'copy', which is a quintessential copyright, is omitted from the licence and that there are no other provisions stating a grant exclusive to copyright might be argued to mean that the grant would cover all IP rights relevant to the program, including patents.[108] This conclusion might prove to be even more valid in the EU territory, in whose Member States the legal terminology might not correspond to the terms set out in the licence, which overwhelmingly originate in US law.

In section 7 of the GPLv2, the following is given:

> *'If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.'*

This does not explicitly state the grant of a patent licence, but any other conduct would be contrary to its phrasing. It results in a compulsory, royalty-free patent licence; not only does the contributor thereby licence their own patent, they are also obliged to obtain a licence for third party patents they are a licensee to, not only for the licensor but also for every downstream licensee.[109] This is consistent with the express patent licence in the GPLv3.

These examples further illustrate the difference between permissive and copyleft licences. In the case of a FOSS program acquired by a patent holder, who wishes to use that program and redistribute it, the BSD poses no problems. As it is permissive, the acquirer may simply opt to license the resulting product under a different licence and thereby protect their patent. However, for software licensed under the GPL, the acquirer is obliged to license a resulting product under that same licence. Thus, they would have to provide a licence *for every single downstream recipient*. This effectively negates patent rights within the territory of the GPL. If we read the FSF's words, this was presumably their aim.

> *'Every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary.'*[110]

In summary, it is likely that there is some type of implied patent licence in most FOSS licences. There certainly is in the copyleft licences, as concerns the patent claims that can be read in the software. The exact terms depend on the wording of the licence, which could of course expressly exclude any patent rights. However, for the licence to be effective, it would be either illogical or purposefully misleading to exclude all patent rights, as this would make it impossible to use the source code without triggering it. Many licences do not contain a clause that permits use, modification and distribution only under copyright, which would be interpreted to permit use, modification and distribution in general and thus also in regard to potential patent rights.

3.3. Patent Exhaustion

If, as set out, exhaustion applies to a FOSS licence, and the author of the corresponding software further holds a patent which reads into said software, their distribution rights in regard to that copy of the software would be exhausted.

However, the EPC has no provisions on patent exhaustion. Additionally, it is not clear whether process patents – which CII patents nearly always are, as they encompass an idea rather than an implementation – can be exhausted and how that would impact the downstream distribution. Furthermore, the different courts in the EU might have very different interpretations.

Moreover, exhaustion usually only encompasses the use and distribution rights, not making new copies and distributing those. Then again, making a copy of a process is hardly possible. Even more than in the case of copyright, it is unlikely that the exhaustion doctrine would be applied in this context. Furthermore, it would not be a suitable solution, as it could not encompass modified downstream distribution and thus not guarantee risk-free conduct for the licensees.

All things considered, patent rights within FOSS are even more difficult to define than their copyright counterparts. This is unsurprising, as the licences often do not expressly mention patent rights – and nor do the commonly used licences originate in patent law. Lastly, there is no mandatory legislation at the EU level, and patents embedded in software are not mentioned, except in the exclusion from patentability for computer programs in Article 52(2)(c) EPC. National legislations can differ greatly, which is problematic considering the international nature of FOSS. Ideally, the Unitary Patent will be brought to life sooner rather than later and encompass a section on patents embodied in software, to clarify these matters. The corresponding legislation might interpret its section corresponding to Article 52(2)(c) EPC to mean that pure software cannot infringe upon a patent, as a patent on software is prohibited.

4. CONCLUSION AND RECOMMENDATIONS

> *"Open source is like Prison Break for developers, can we put a fence around this?"*[111]
>
> *– Audience member at the Open Source Business Conference, 2010*

The above quote raises a good question: can we define the boundaries of open source? The copyleft licence takes inspiration from US copyright law and reverses it. Instead of providing an author with the exclusive right to prevent use, reproduction, (re-)distribution, modification and communication, every recipient is provided with the 'inclusive' right to use, reproduce, (re-)distribute, modify and communicate the program under one condition: the program must remain free, so upon distribution the source code must be disclosed or available. This condition is where copyleft differs from permissive licences, which do not require this. Programs licensed under a permissive licence may be included in proprietary software without further requirements. In the case of the GPL – the original copyleft licence – this requirement goes even further by requiring that any reproduction, in whole or in part, modified or not, also be licensed under the same version of the GPL. The next question would be how we should define that work and, indeed, put a fence around open source.

Software is protected by copyright under EU law, denoting computer programs as 'literary works' under the Berne Convention. Thereunder, it is the source code as written by a developer that is protected, in consistency with a literary work – but less so with the nature of software, seeing as software serves a functional purpose, as a set of instructions for a computer to carry out. Due to this discrepancy, and in spite of Article 52(2)(c) EPC which excludes computer programs from patentability, there has been a rise in patents on software in the last few years. Companies that develop software, in one way or another, have an interest in utilising the vast amount of available open source code, because it has a low acquisition cost. This means the developers and the budget can be focused on qualitative innovation rather than having to start from scratch.

[106] Haapanen (n 18) 289.
[107] Ibid. 236.
[108] Ibid. 237.
[109] Ibid. 237.
[110] GPLv3, preamble, para. 9.
[111] Angie Hirata 'Top 10 Quotes from OSBC 2010 and What It Means for Open Source Developers' (ActiveState, 22 March 2010) https://www.activestate.com/blog/top-10-quotes-osbc-2010-and-what-it-means-open-source-developers/ accessed 9 March 2020.

"Open source isn't about saving money, it's about doing more stuff, and getting incremental innovation with the finite budget you have."[112]

– Jim Whitehurst, CEO, Red Hat

Ideally, the same company will want to avoid disclosure of proprietary source code as well as high-risk infringement suits. A copyleft licence requires disclosure in addition to distribution under the licence originally used; an obligation that encompasses derivative works, making the scope of that definition crucial. In light of the aim of the Software and InfoSoc Directives, as well as the nature of software, a derivative work should not be interpreted broadly. Interoperability is a key component of software and participation in the market requires compatibility with established software. Consequently, it would not be sensible to define a computer program as a derivative work for the sole reason that certain components enable interoperability. A suggested definition is 'a work based on an original work, in its entirety or in part, unless (a) the part in question exists exclusively to aid interoperability and promotion of a harmonised software environment and (b) the remaining connected software has been developed independently.' A useful tool to make assessments thereof would be to establish a legal fiction: a person who can read source code and software architecture as an average person can read text.

The effect of the digital exhaustion doctrine, which originated in *UsedSoft*, should also be interpreted conservatively. Subsequent case law shows that the CJEU supports such an interpretation. In the case of FOSS licences, the dispersion will likely not constitute a sale, due to a lack of protection or possible remuneration for the author in other cases. In addition, imposing potential measures to ensure compliance, such as encoded keys, would contradict the nature of FOSS. The application of exhaustion has differed between the Software Directive and the InfoSoc Directive, with the Software Directive supporting a stricter reading. This indicates that simpler code might be more easily exhausted, as more intricate computer programs have been regarded as complex works governed by the InfoSoc Directive.

Shifting the focus to patents, they protect the underlying idea of a computer program rather than its implementation, unlike copyright. Their reach within FOSS licences is the subject of controversy. This is unsurprising, considering that most FOSS licences neither expressly mention patent rights nor originate in patent terminology. Furthermore, the EU lacks harmonised legislation for patents in general and especially for patents on computer-implemented inventions. Fragmentation between national legislations is problematic, given the international nature of software.

Still, some FOSS licences do expressly mention patent rights. Some cases, such as the GPLv3, nearly eliminate a contributor's patent rights, while others, such as the MPLv2, do not cover downstream modifications,[113]. Finding a balance is difficult, because one wants to maintain respect for IP rights while simultaneously enabling the continuing existence of FOSS, specifically in a copyleft context. A task made harder by the lack of oversight regarding the quality, quantity and classification of patents on CIIs, which makes identifying infringing acts difficult.

As for licences that do not expressly mention patent rights, proper functioning of such a licence, at least in regard to software, requires that a licence is implied *if* the patent holder further distributes the program. Whether they have contributed to the program or merely distributed it should not be of consequence, as any other interpretation would incite misleading practices. However, such implied licences should not extend to patent claims affected by modifications of a downstream contributor who is not the patent holder, nor to requiring a licensee of a third party patent to provide all downstream recipients with a licence to that patent (except in incriminating circumstances). These conditions should only be possible by virtue of explicit terms.

Whether or not exhaustion should be applied in a FOSS context is inadequately substantiated. Patents on computer-implemented programs are predominantly process patents, under which it is illogical to speak of copies. Furthermore, exhaustion would not affect downstream distribution and modified versions of a program and is therefore an inadequate solution.

[112] Ibid.

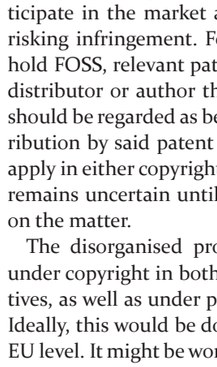
[113] Mozilla Public Licence version 2.0 (Mozilla, January 2012) <https://www.mozilla.org/en-US/MPL/2.0/> accessed 9 March 2020.

[114] Many licences were last updated over a decade ago; the most commonly used ones (GPLv2, GPLv3, MIT) were all published over a decade ago.

Ideally, the Unitary Patent will come into force in the near future and be followed by clearer definitions and prohibitions concerning patents embodied in software. An interpretation of Article 52(2)(c) EPC in such legislation, showing that pure software cannot infringe a patent, as programs for computers are excluded from patentability, would be optimal.

Although there is a lot of uncertainty in the field of FOSS licences, cautious parameters can be formulated. The proper interpretation will vary on a case-by-case basis, as even the applicable legislation might differ, but a narrow reading of a copyleft licence is generally advisable, to ensure that companies can safely rely on open source, participate in the market and protect investments without risking infringement. For the same purposes and to uphold FOSS, relevant patent claims held by a downstream distributor or author that might otherwise be infringed should be regarded as being implicitly licensed upon distribution by said patent holder. Exhaustion is unlikely to apply in either copyright- or patent-related cases, but this remains uncertain until the CJEU has made a judgment on the matter.

The disorganised protection for computer programs under copyright in both the Software and InfoSoc Directives, as well as under patent law, needs to be addressed. Ideally, this would be done in a binding regulation at the EU level. It might be worth considering to depart from the current protective system and create a sui generis protective IP right for software which respects both its implementation and functionality, as was initially intended by WIPO in the 1980s. Otherwise, a directive or regulation on CII patents that addresses their interactions with copyright is necessary. In addition to conclusive legislation and case law, it might prove useful to establish a standard-setting organisation for FOSS licences, especially for the EU, which is home to many official languages and legal systems. This would promote the quality of such licences and ensure clear, EU-compatible terminology, as well as more frequent updates to counteract the neglect that many FOSS licences are currently subject to.[114]



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