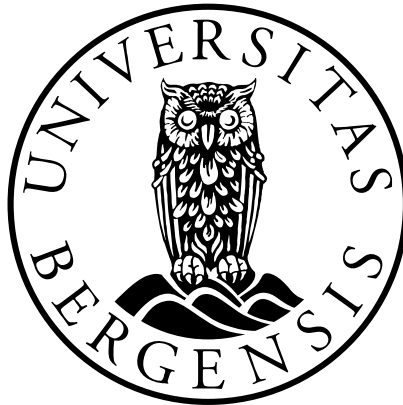


# Spray Paint Can vs. AI

*How the originality requirement under EU copyright acquis  
can be applied to AI-aided image production*

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# 1 Introductory remarks

## 1.1 Abstract

AI tools recently introduced actualize questions about their impact on user's copyright from AI-generated elements in the output. This thesis first gives an empirical study presenting the technology and a case of AI-assisted image production. Then, a legal analysis shows how to apply the originality requirement to the case. When the first condition of the originality requirement is understood to concern authorial intent, the application seems unproblematic. The second condition, requiring expressions of the user's free and creative choices in the output, has limitations that are especially relevant for AI in that there is no norm for determining a *de minimis* threshold for deciding if the expressions make a too small impact on the whole of the output for copyright protection. The application of the originality requirement in two theoretical models is discussed, with emphasis on how they help efficiently decide user's copyright regarding the conditions of the originality requirement. This culminates in some remarks on how EU acquis currently needs further development to determine copyright in line with stated values.

## 1.2 Honorary mentions

Philipp Lenssen, artist in Germany, who willingly replied to my request and supplied his artwork for use in this thesis and shared his process description on his web page, thank you.

My dear wife Katrine for her love, enthusiasm and support during my studies and writing process, thank you.

## 1.3 Limitation on reproduction

This document is free to reproduce on the condition that it is not presented with some image of a humanoid robot wielding a pencil or paintbrush, a gavel, a combination of these, or anything closely related.

## 2 Introduction

*“Creativity to me, it’s just like... it’s like a bird, like a friendly bird that embraces all ideas and just, like, shoots...out of its eyes all kinds of beauty.”*

-Liz Lemon, lead character in 30 Rock (TV series)

Like Liz, most of us have some idea about what creativity is, but we might not think much about it. Creativity is an abstract concept trying to describe a process in our brains that we don’t fully understand.<sup>1</sup> Still, we make laws regulating intellectual property rights based on human creativity.<sup>2</sup> Until now, understanding creativity has seldom been an issue. Human creativity has been expressed using simple tools to create tangible output that becomes copyright protected as soon as it is a fixed manifestation of that creative expression.

Now, AI has made understanding human creativity more important than ever. While the copyright regulation so far has been unchanged in the EU since the introduction of publicly available AI software, this software enables users to produce images with extremely little regard to creative effort. We have arrived in a situation where both a user who makes no intellectual effort at all, and another user who pours out a monumental creative effort, can both have impressive images produced.<sup>3</sup> The visual impressions of the output are less indicative than ever before of the protection that its creator has. The AI software has functionality that enables it to produce output that is easy to mistake for human creative expression. Simultaneously, AI software is integrated in professional work in such a way that businesses must consider re-structuring their staff in order to realize the efficiency potential and keep a competitive edge.<sup>4</sup> Such re-structuring will probably only be viable to businesses who deal with intellectual property assets if they can assure that they don’t lose the rights to their output along the way.<sup>5</sup> This makes inter-disciplinary understanding of the creative process and legal copyright criteria relevant to understand, and this thesis seeks to contribute to that.

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<sup>1</sup> Daria Kim and others ‘Clarifying Assumptions About Artificial Intelligence Before Revolutionising Patent Law’ (71 GRUR International 295, 2020) p. 320

<sup>2</sup> Peter Bernt Hugenholtz and João Pedro Quintais ‘Copyright and artificial creation: does EU copyright law protect AI-assisted output?’ (52 IIC-International Review of Intellectual Property and Competition Law 1190, 2021) p. 1203

<sup>3</sup> Examples given *infra*, see chapter 5.

<sup>4</sup> See e.g., Microsoft Office Copilot <https://blogs.microsoft.com/blog/2023/03/16/introducing-microsoft-365-copilot-your-copilot-for-work/> accessed 2023-04-19

<sup>5</sup> This topic is discussed in the podcast The Marketing Artificial Intelligence Show episode of 2023-03-21, see a description of the episode at <https://www.marketingaiinstitute.com/blog/the-marketing-ai-show-episode-39-gpt-4-is-here-google-and-microsoft-embed-ai-into-core-products-and-u.s.-copyright-office-says-you-dont-own-ai-generated-content> accessed 2023-04-19

## 2.1 The research question

This thesis will attempt to answer the following research question:

*How can the originality requirement under EU copyright acquis be applied to an AI-aided image production?*

The research question has been given a practical approach by addressing the application of the originality criterion. AI has been frequently discussed in science literature, and while attention has been given to the theoretical discussion on copyright to AI output, the discussion seems to be less focused on concrete, practical examples of use.<sup>6</sup> This thesis also gives an updated perspective because AI and its uses has changed since many sources have been published. For example, a theoretical model describing application of copyright law on AI output (viewed in section 5.2.1.) has been written before image production AI was available to the public.<sup>7</sup>

## 2.2 How the research question will be answered

A practical case study is chosen as a platform for discussion, with use of concepts from legal theory, illustrating disagreements, and showing how they apply with the intention of providing more readability than navigating several theoretical articles. This thesis aspires to provide accessible answers on how to start using AI while reliably get copyright protection, and prominently in this regard is fulfilling the originality requirement. In lieu of a judgement or new regulation on the topic, explanation and application of the current rules and statements are applied to a recent example of AI use. The example will be discussed while seeking the point of legal uncertainty through chapter 5, attempting to identify the point where the legal outcome under current EU acquis is entirely uncertain.

Empirical sources have been studied to present the AI technology sufficiently so that a reader with common knowledge of EU/EEA legal culture but no previous knowledge of copyright and AI in particular can understand the legal analysis. These are published articles in academic journals and published books by scholars in the relevant fields of technology, supplied with news

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<sup>6</sup> See e.g., Ole-Andreas Rognstad, 'Creations caused by humans (or robots)? Artificial intelligence and causation requirements for copyright protection in EU law' in *Artificial Intelligence and the Media* (Edward Elgar Publishing, 2022). In his footnote 2 stating it is impossible to enumerate the scholarship of recent year's debate, and giving many examples of articles that are part of it. These examples, as with most of the academic references in the literature list of this thesis, address the problem on a theoretical level and not related to practical cases.

<sup>7</sup> Image generation with AI is called "transformer" model, a term that later seem to have been displaced by "generative AI" in popular use, see European Commission and others *Trends and developments in artificial intelligence : challenges to the intellectual property rights framework : final report* (European Commission Publications Office, 2020) p. 84

articles and blog posts exemplifying some opinions and trends on the topic. Empirical sources are also used to describe a case of AI-assisted image production, with the case and research presented in chapter 4.

The following legal analysis in chapter 5 uses EU legal method, while the application of EU copyright *acquis* to EEA countries such as Norway is briefly introduced. The relevant norm is regulated almost entirely through an EU directive and case law from the last 15 years. Legal theory explaining ways to understand the norm has been identified through curriculum literature at the master's programme in law at the University of Bergen.

Both the empirical study and the legal analysis has also been supplied with results from literature search in search engines Oria and Publications Office of the European Union.<sup>8</sup> English results from 2019 or later were identified using the search term “*copyright OR intellectual property AND artificial intelligence OR ai*”, and the first 50 results sorted by relevance were manually reviewed for actual relevance to the research question.

The type of *AI* concerned in this thesis make *images* as their output, that is digital picture files such as the case example in chapter 4, and followingly I will normally call them AI without specifying their characteristics further. Note that AI typically also use images for training purposes during the machine learning and that this has its own copyright issues outside the scope of this thesis.<sup>9</sup> EU copyright law has similar rules regarding many types of output, such as texts or music, outside the scope of this thesis.

A case with stated facts is introduced, proof-questioning falls outside the scope of this thesis. As proof seem relevant in copyright cases, users are recommended to document their work process to avoid questions about proof. There are also many other copyright issues arising from use of AI that fall outside the scope.<sup>10 11 12</sup> The intense current research and resulting amount of literature on this topic creates an imminent risk for overlooking relevant sources. The limited format of this master thesis restricts the possibility to make accurate descriptions of the empirical and legal study, more research is needed.

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<sup>8</sup> Search conducted on February 10<sup>th</sup>, 2023.

<sup>9</sup> See an example of image input court case at <https://www.tek.no/nyheter/nyhet/i/KnPAR7/kunstnere-og-getty-images-saksocker-stability-ai-og-andre-bildetjenester> accessed 2023-03-06

<sup>10</sup> See <https://dataconomy.com/2022/09/ai-artwork-wins-art-competition/> accessed 2023-03-09

<sup>11</sup> See <https://hyperallergic.com/806026/digital-artists-are-pushing-back-against-ai/> accessed 2023-03-08

<sup>12</sup> Read the demand for jury trial at <https://cdn.arstechnica.net/wp-content/uploads/2023/01/2023-01-13-Complaint.pdf> accessed 2023-03-08



# 3 AI in image production and EU/EEA copyright

This chapter aims to introduce the newly available AI technology in such a way that this reader can follow a legal analysis of a copyright issue. To ensure this, the technology is introduced and then its application in image production, how this changes image production and sparks controversies that indicate oncoming copyright disputes. Finally, there is a description of applicable law for such disputes in general and for the case presented in chapter 4 specifically.

## 3.1 Artificial Intelligence

While the concept of artificial intelligence has been widely debated, one comprehensible description can be *“synthesized intelligence through both computer software and hardware, essentially constructing computer programs capable of exhibiting intelligence”*.<sup>13</sup>

More recently, an ‘artificial intelligence system’ was defined in the proposed ‘Artificial Intelligence Act’ of the European Union (EU), including a reference to a broad range of techniques and approaches listed in its Annex I.<sup>14</sup> This thesis will use a slightly narrower, more readable version of this definition where the reference is replaced (in [brackets]) by the techniques and approaches from Annex I litra A that seem relevant for this thesis. The definition of ‘artificial intelligence system’ (abbreviated AI in the following) is:

*“software that is developed with [machine learning approaches, including supervised, unsupervised and reinforcement learning, using a wide variety of methods including deep learning] and can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with”*<sup>15</sup>

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<sup>13</sup> Jani Ihalainen ‘Computer creativity: Artificial intelligence and copyright’ (Journal of Intellectual Property Law & Practice, 2018) p. 724

<sup>14</sup> See Article 3 (1) of Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts (2021/0106(COD)), available at <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52021PC0206> accessed 2023-04-21. Note that copyright issues are not in the scope of this act, see Article 1.

<sup>15</sup> See Kim and others p. 296 where it is noted that use of anthropomorphic language like e.g., *“deep learning”* that could suggest that the AI has a consciousness or other human traits is discouraged in the AI community because it is seen as misleading from understanding the technology involved.

From this definition, we can see a few key phrases related to the case in section 4 and the legal analysis in section 5. These need to be understood because the role of the user and the technology in the creative process will be shown to have great implications for the copyright. The phrases will be explained in the following subsections.

### 3.1.1 Software that is developed with machine learning approaches

Like e.g., a calculator, machines can help us with mundane tasks and be much more efficient than humans at it. Programming software can be such a task but has up until recent years been done exclusively by humans.<sup>16</sup> Computers have been taught how to contribute in writing their own software.<sup>17</sup> This learning happens when computers analyze vast quantities of data and identifies characteristics, such as how pictures of a lawyer looks different than pictures of ballerinas, through many rounds of trial and error.<sup>18</sup> <sup>19</sup> Describing such differences as software code has been seen as too difficult for human programmers, and accordingly when this has been enabled through machine learning, the AI software is considered revolutionary by performing tasks that previously were considered only solvable by humans.<sup>20</sup> The data used to learn this, e.g., thousands of labelled pictures of lawyers and ballerinas, can be called *training input*.

During development, AI software is trained (this is called deep learning) using training input data (e.g., pictures with alt-text captions) and a set of weights (values) on various parts of the neural network. The weights are at first random but are adjusted every time the output is not satisfactory, according to a goal of recognizing connections between training data. If an AI can guess the alt-text to 95 % of the images in its training input based on the images themselves, e.g., seeing lawyers in most of the pictures labelled “lawyers”, which could indicate that the weights are sufficiently adjusted and training is complete. This weight adjustment follows feedback from the output. After many adjustments, called generations, the AI will become better at producing acceptable output. When the training has reached an acceptable level of accuracy, i.e., when the developer agrees with the results from the software often enough that the developer is satisfied,

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<sup>16</sup> While the first artificial neural networks capable of machine learning was developed in the 1950's, it has been a niche field of experimental research that did not gain much attention until the 2000s. See Morten Goodwin *AI: Myten om maskinene* (Humanist forlag As, 2020) chapter 3.

<sup>17</sup> An explanation of how this technology works is provided in David E. Rumelhart, Geoffrey E. Hinton and Ronald J. Williams 'Learning representations by back-propagating errors' (323 nature 533, 1986)

<sup>18</sup> A description of how machine learning was implemented in image generators can be found in Elman Mansimov and others 'Generating images from captions with attention' (2015)

<sup>19</sup> Goodwin , see especially p. 70-75

<sup>20</sup> Description of the revolutionary properties of AI can be e.g. Bernard Marr *The Intelligence Revolution: Transforming Your Business with AI* (Kogan Page 2020)

the software is ready for use and no longer changed. The weights are no longer adjusted, and the training input is no longer used, only machine-written code remains. After a while, researchers found that the machine's emerging ability to understand images also could be "reversed" and used to create images based on text prompts.<sup>21</sup> The result became finished software programs like most other, that can take an input from a user like e.g., a text prompt, and will produce an output, e.g., an image of the prompted motive, such as the program Midjourney used in our case example in section 4.

### 3.1.2 Human-defined objectives

The software is now finished from the developer and made available to the user. The user, a human person, can now interact with the AI in the same way as many tools. As one can approach a calculator with a math problem and type it in for calculation, the user gives the AI its defined objectives, which can be called *user input*. In this thesis we will focus on *text prompts* and images as user input. A text prompt is a string of text, typically a few words long, such as "dancing lawyer".<sup>22</sup> An image as *user input* is typically used along with some text prompt or another image, e.g., to make another version of the first image in the style described in the text prompt, or in the style of the second image.

### 3.1.3 Generating outputs such as content

The software receives the user input and generates output according to its training. Such generation is an execution of its instructions, but also an execution in the sense of the user's creative process. The resulting type of generated content that this thesis will focus on is digital images, which will be referred to as the *output*. As will be explained *infra*, the kind of output that AI can generate at the time of writing is 'revolutionary' in the sense that it was seen as only possible for humans to generate such output little more than a year ago. Such generation may consist of explaining accurately the motif in a picture (text generation), or drawing up a picture based on a description (image generation), or many other kinds.

Part of AI's like Midjourney is the 'black box' functionality, which is a common term for describing how the software, because of machine learning process of coding where the software finds novel expressions with no human parallel, does not use an internal language that is

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<sup>21</sup> See a thorough description in Mansimov and others

<sup>22</sup> This is shown in the use case for section 4, available at <http://aiandart.club/process/> accessed 2023-04-21

comprehensible for humans. This makes the AI generations unpredictable and the reason for the results unexplainable.<sup>23</sup>

### 3.1.4 Other clarifications regarding applied AI

AI has in recent years had rapid development and become available for the public.<sup>24 25 26 27</sup> The generative ability of today's AI raises the question if it should be regarded as a tool, or if it has become something else.<sup>28</sup> The term 'tool' usually refer to something controlled by a user.<sup>29 30</sup> A "threshold of autonomy" has been described, when the AI surpasses this it will be so independent from users, disobedient or capable of performing automated tasks without pre-programmed instructions that it no longer should be regarded a tool.<sup>31 32</sup> In this regard, the use of AI presented in chapter 4 is presumed to be a tool.

For the purposes of this thesis, a *user* of AI software is someone who utilizes finished AI software to produce output. For the instances where we don't yet know if the result will be copyright protected, it would include too much of an assumption to call the user an 'author'. This is more relevant when using AI because, as described more in detail later, there are many ways to use AI and not get copyright protection, relative to a paintbrush painter who mostly can be sure to get copyright protection on all her paintings. The term *user* is therefore used in this thesis consistently instead of creator, artist, author, etc. I distinguish the *user*, who uses a finished piece of AI software, from a *producer*. The latter is a person or several persons, even a company like OpenAI, who makes the AI software into a useable product for the user, much like any other software. This thesis is limited to the potential rights of the user, as is elaborated *infra*. The potential rights of the producer is discussed by Gervais, who concludes that the producer is minimum one degree removed from the creative choices and as such is unlikely as a rightholder.<sup>33</sup>

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<sup>23</sup> Rognstad p. 184

<sup>24</sup> See a thorough explanation in Mansimov and others

<sup>25</sup> See announcement of Midjourney AI going into publicly open Beta testing on 2022-07-12 at <https://twitter.com/midjourney/status/1547108864788553729> accessed 2023-03-06

<sup>26</sup> Announcement of availability without waitlist on producer OpenAI's website at <https://openai.com/blog/dall-e-now-available-without-waitlist/> accessed 2023-03-06

<sup>27</sup> Introduction of Wombo app commented on <https://www.theverge.com/2021/12/6/22820106/ai-art-app-dream-synthetic-media-wombo> accessed 2023-03-06

<sup>28</sup> See <https://va2rosa.medium.com/copyright-storm-authorship-in-the-age-of-ai-baba554aa617> accessed 2023-03-08

<sup>29</sup> John Danaher 'The Ethics of Algorithmic Outsourcing in Everyday Life' (2019) p.100

<sup>30</sup> Kim and others p. 319

<sup>31</sup> Daniel J. Gervais 'The Machine as Author' (105 Iowa law review 2053, 2020) p. 2098

<sup>32</sup> See such a scenario described on p. 27, such autonomous AI could be said to exist already.

<sup>33</sup> Gervais p. 2059

## 3.2 Applicable law

The chosen topic for this thesis demands describing the common originality requirement for the EU and EEA. The relation to relevant national legal system is briefly described in this section, how emphasis will be on using the EU copyright *acquis*, with the corresponding EU legal method applied to the criterion on the case presented in section 4.2 (Filip's case).<sup>34</sup> EU copyright *acquis* will be introduced in chapter 5 similarly to how it is used in the CJEU, i.e., without any regard to nationally specific copyright *acquis* as it would in a national court. The legal sources and method of the national legal system will not be the focus of the legal analysis but have a broad application so far as it overlaps with the legal method of the EU / EEA regarding the originality requirement. Jurisdiction is also outside the scope.

This thesis illustrates how EU regulations and principles laid down by the CJEU affect not only EU but also the EEA, except where specific national rules are not harmonized.<sup>35 36</sup> This makes the legal analysis presented in chapter 5 applicable for most of Europe's countries, even though Filip's case is set in Norway, which is not part of the EU. Norway is an EFTA country and part of the EEA agreement.<sup>37</sup> Norway has, like most EU countries, implemented the articles of the 'InfoSoc' EU directive into national law.<sup>38 39</sup> Unlike in EU countries, courts in EEA-participating EFTA countries such as Norway cannot ask the Court of Justice of the European Union (CJEU) directly for interpretation advice. If necessary for a judgement, a Norwegian court may instead consult the EFTA court for advice on how to interpret the EEA treaty.<sup>40</sup> The EFTA court has a duty to make due regard to the principles laid down in relevant judgements from the CJEU made

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<sup>34</sup> For more on EU method, see e.g., Koen Lenaerts and José A Gutiérrez-Fons 'To say what the law of the EU is: methods of interpretation and the European Court of Justice' (20 Colum Journal of European Law 3, 2013)

<sup>35</sup> According to Article 288 of the Treaty on the Functioning of the European Union (TFEU), directives must be implemented into national law by Member States with a binding result but options on form and method. This is elaborated in Margot Horspool, Matthew Humphreys and Michael Wells-Greco *European Union Law* (Oxford University Press 2018) p. 186-187

<sup>36</sup> Peter Bernt Hugenholtz 'Harmonisation or unification of European union copyright law', (Monash University Law Review 2012)

<sup>37</sup> The EEA treaty is mainly implemented through the EEA law: EØS-loven (LOV-1992-11-27-109)

<sup>38</sup> See fn. 59

<sup>39</sup> The 'InfoSoc' directive is applied through the Norway's EEA agreement § 6 (LOV-1992-11-27-109), see appendix XVII on copyright, section 9(e). The following copyright law Åndsverksloven (LOV-2018-06-15-40) was implemented with a reference to the directive, and uses directly translated equivalent terms for all of the legal rules relevant for this thesis.

<sup>40</sup> EØS-loven (LOV-1992-11-27-109), containing the ODA-agreement, see especially part 4, art. 34

after the EEA-agreement was signed in 1992.<sup>41</sup> CJEU cases are in this way said to form ‘quasi-precedent’ in Norwegian law.<sup>42 43</sup>

In Norway as in any EEA or EU countries, both the national law and EU *acquis* is to be decisive for the result, but the law is usually conform to the EU *acquis*.<sup>44</sup> Ireland is an example where national law sets up a different requirement for ‘author’ that would probably give a different result in a case like *Filip’s*, and has been criticized for lack of harmony with EU regulation.<sup>45 46</sup>

In the legal analysis *infra*, some Norwegian copyright case could help deciding borderline cases, adding to the norm from case law from EU countries. Such a kind of contribution would be filling in areas that otherwise are partially unregulated and should help with predictability in the legal culture and is followingly not criticized like the Irish requirement mentioned *supra*.

While the central legal source of the ‘InfoSoc’ directive 2001/29/EC of the European Parliament and of the Council harmonizes certain aspects of copyright and related rights, the scope of this thesis is limited to copyright.<sup>47</sup> The limitations to applying related rights is discussed in legal theory.<sup>48</sup>

Considering applying the law to AI, there seems to be some opinions that all questions about copyright to output made with AI can be treated similarly.<sup>49 50</sup> To illustrate just how vast the spectrum of cases of AI use is, we can consider some examples. First, AI software is, like other kinds of software, very diverse. You can tailor-make an AI to a specific project, training it with specific input to make sure it will generate certain kinds of results. Let’s imagine that a company builds an AI from scratch, using carefully selected input and with the creative role of human employees evident at various stages of the creative process. Such a project was *The Next*

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<sup>41</sup> *EØS-loven* (ibid.), ODA-agreement part 1, art. 3

<sup>42</sup> See page 144 in M. M. Kjølstad, S. Koch and J. Ø. Sunde, An Introduction to Norwegian Legal Culture in Chapter 5 of the book Sören Koch and Jørn Øyrehagen Sunde *Comparing Legal Cultures* (Fagbokforlaget, 2020)

<sup>43</sup> Landmark *Finanger I judgement* of the Norwegian Supreme Court, Rt. 2000 s. 1811 on page 1815.

<sup>44</sup> See page 1 of report [https://www.europarl.europa.eu/RegData/etudes/note/join/2010/419621/IPOL-JURI\\_NT\(2010\)419621\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/note/join/2010/419621/IPOL-JURI_NT(2010)419621_EN.pdf) accessed 2023-03-09

<sup>45</sup> Hugenholtz and Quintais pp. 1211-1212, see especially its footnote 132.

<sup>46</sup> Commission and others pp. 8, 88 and 117

<sup>47</sup> This is later referred to as ‘InfoSoc’.

<sup>48</sup> Related rights, also called neighboring rights, and their potential to offer legal protection to AI-assisted outputs, is described in Commission and others pp. 88-95

<sup>49</sup> See e.g., <https://mezha.media/en/2022/12/15/artists-revolt-against-artificial-intelligence-artists-boycott-artstation/> accessed 2023-03-08

<sup>50</sup> See also <https://analyticsindiamag.com/developers-love-ai-artists-not-so-much/> accessed 2023-03-08

*Rembrandt*, and it is considered by legal scholars to likely be copyright protected.<sup>51 52 53</sup> We do not know for certain because it is not tested in court, but this seems like the best case for copyright protected output from AI use so far. Conversely, it is very easy to imagine examples of the opposite. A basic process of writing a short text prompt and accepting the AI generated output as finished product will probably not be copyright protected, “AI generated output” is distinguished from “AI assisted production”, where the former probably will not generate copyright protected output but the latter probably will.<sup>54</sup> This illustrates just how different the use of AI can be both in terms of the creative process and resultingly, how the output can be copyright protected. In the legal analysis, the law must be applied on a case-specific level, to the actual creative process involved in using the specific AI.

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<sup>51</sup> See the Next Rembrandt project website with description of the creative process at <https://www.nextrembrandt.com/> accessed 2023-03-08

<sup>52</sup> The project and how it likely is copyright protected is described in Commission and others p.8

<sup>53</sup> Rognstad 2022 p. 188

<sup>54</sup> Hugenholtz and Quintais p. 27

## 4 The case

This thesis concerns applying the originality requirement of the law to AI-aided image production. To secure the relevance of this thesis, the legal analysis both concern actual AI-aided image application from the time of writing and illustrate borderline issues which allows exploring in most depth the underlying research question.<sup>55</sup> To achieve this, an empirical case of actual use has been identified as basis for making a hypothetical case of legal dispute where the result is not clear-cut, e.g., from simply looking at the requirements of the law in their literal meaning.

### 4.1 Finding a real-world case for a starting point

Here follows the method for identifying the underlying practical real-world case of actual AI use that the hypothetical case description is based on. While use of AI in image production has become very popular, as discussed in chapter 3, no suitable judgements or ongoing cases for the courts in EU or EEA have been found to concern the specific topic regarding copyright to the output image for users of AI. The reason could be that the tools are new, and that cases will emerge with sufficient popular use.<sup>56</sup> Secondly, adapting also seems necessary to present the underlying legal questions of this field, and to make it ambiguous enough to illustrate the extent of the legal protection that the copyright concerns.

The the real-world case was found by asking in the internet forum ‘*r/aiart*’ on January 3<sup>rd</sup> 2023, and reading through submitted replies until a fitting example could be identified.<sup>57</sup> Philipp Lenssen in Germany helpfully referred to a description of his creative process and authorized reproduction of the resulting image.<sup>58</sup> This example seemed fitting because it included recent use of the latest edition of the popular AI Midjourney, common techniques like text prompting, different types of creative choices, and a thorough explanation of the process.

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<sup>55</sup> See p. 7

<sup>56</sup> Legal theory consistently regards copyright to the output for AI users as untested in courts, see e.g., Rognstad in his footnote no. 5.

<sup>57</sup> The question: “*Seeking creators describing their Ai techniques for copyright thesis: [Serious] Would you like to know if you can get copyright to your art? I’m writing a master thesis on copyright to graphic works made with AI, and need input on how you use AI. This will be used as practical cases for a legal analysis, i.e. answering if the human input is significant enough in each case to qualify as human authorship and copyright accordingly. I’m especially interested in how you express creative choices or leave them to the AI. All serious contributions will be mentioned and get the finished thesis in June.*” See

[https://www.reddit.com/r/aiArt/comments/101bejv/seeking\\_creators\\_describing\\_their\\_ai\\_techniques/?utm\\_source=share&utm\\_medium=ios\\_app&utm\\_name=ioscss&utm\\_content=2&utm\\_term=1](https://www.reddit.com/r/aiArt/comments/101bejv/seeking_creators_describing_their_ai_techniques/?utm_source=share&utm_medium=ios_app&utm_name=ioscss&utm_content=2&utm_term=1) accessed 2023-01-03

<sup>58</sup> See the blog post on <http://aiandart.club/process/> accessed 2023-01-03, as well as fig. 1.



The real-world case was adapted into the hypothetical case (section 4.2) by consolidating the description of the workflow and setting a more accurate description of creative choices. A second party with a conflict of interest was added. The location of the parties to Norway to illustrate how EU law similarly applies to an EEA-participating EFTA country. The Norwegian variant of Philipp's name "Filip" is used for the hypothetical case to make it easier to separate the real-world case from the hypothetical. The image (fig. 1, *infra*) produced in the real-world case is identical to the image for the hypothetical case.

The simplified hypothetical case is not intended to say that Philipp has had easy job in creating the image or that his efforts may be replaced by software. The hypothetical case is only given to enable legal analysis.

## 4.2 Filip's case - the hypothetical

Filip lives in Norway and wants to make an image. He had a vision in a dream the night before, which he uses as inspiration. He writes down quick notes on what he wants to make an image of through the day; a protestor in the central foreground holding up a sign, and people casually flying by in the background sky. He is not locked in on the idea in the sense that it must be exactly like this, rather something along those lines. He deliberately does not make firm choices on every detail yet, like the motif on the sign, although he has an idea what it might be. That is because he is open to inspiration, among other things from using the AI.

In the evening Filip sits down and chooses the Midjourney AI to try and execute a first version. First he prompted: "people flying in air, bright sky, lonely protestor with sign", and the AI generates 4 versions immediately. This resulted in images with airplanes, which was not in line with his idea. Filip rephrased the prompt "people flying in air, sky, sign". Then he tried to add but removed: "wide angle", added "sunny", but then replaced it with "bright". The final prompt was: "people flying in air, sky, sign, bright".

Philip does this step-wise replacement of words (which he calls A/B probing) instead of using Midjourney's *weight* function, which would allow to grade the impact of each word in the prompt. After several generations of his final prompt, he likes one with a certain placement of four humans the most, which makes him conscious about what he wants to make. He re-writes the prompt once more and chooses one version out of four where the perspective is slightly more like a fish-eye lens. He chooses an aspect ratio of 2:3, which is also added to the prompt when

using Midjourney. He also paints the hair longer on one of the persons. He adjusts the colors of the image to be tinted slightly more golden yellow and paints a “no flying” pictogram on the sign manually using Photoshop. He makes this final manual photoshop edit because the AI is not good at making text and meaningful pictograms which is necessary for the central signpost. Then he is finished, and proudly posts the image on his website (fig. 1).



Fig. 1, *Flying* by Philipp Lenssen, 2022

The next day Filip discovers that a journalist writing about air travel has published his picture as an illustration for an article in a Norwegian based internet news outlet, without asking. The journalist has written a headline that entirely covers the signpost in the middle of the picture (fig. 2).

Filip contacts the journalist who replies that the picture is made using AI, and claims that his exclusive authorial rights have been violated. The journalist thinks Filip's rights are limited to the signpost pictogram which was drawn without AI-assistance, and that resultingly, the rest is free to use. He also argues that the choice between computer generated images is no different than choosing between stones on a beach; that presenting them gives you no copyright. Filip proceeds to sue the newspaper, and they take their arguments to court.



Fig. 2 – The hypothetical journalist's edited version which he published.

# 5 Legal Analysis

This chapter will concern legal analysis of the EU copyright acquis to find a suitable norm for a decision in Filip's case using the applicable law described in section 3.2. At the core of this analysis is the application of the originality requirement. After the case specific analysis, two theoretical models suggested for deciding copyright to AI-assisted outputs will be briefly presented with some comments on how they suggest applying the originality requirement to Filip's case. Finally, some legal policy considerations are given based on the application of the originality requirement.

## 5.1 Does Filip have copyright protection of the image (fig. 2)?

The general rule regarding Filip's rights is in the 'InfoSoc' directive 2001/29/EC Article 2, letter (a).<sup>59</sup>

*"Member States shall provide for the exclusive right to authorize or prohibit direct or indirect, temporary or permanent reproduction by any means and in any form, in whole or in part: (a) for authors, of their works;(...)"*

While we normally consider copyright a positive right to intellectual property, the practically relevant side of the copyright is the negative right following the term 'exclusive', which is the right to deny others reproduction and distribution of your intellectual property.<sup>60</sup> In this way, exclusive access to the intellectual property can be subject to licenses and paywalls, securing incentives for artists to make further creative production. EU copyright acquis has a stated goal of increasing competitiveness and growth of European industry with subsequent safe employment and job creation, through increased legal certainty and high level of protection.<sup>61 62</sup>

The Journalist has 'reproduced' most of the image (fig. 1) by publishing most of it (fig. 2) without 'authorization'. The ambiguous and relevant criteria for our case are 'author' and 'work'. In this

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<sup>59</sup> See 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, henceforth referred to as 'InfoSoc'.

<sup>60</sup> Rognstad p. 172

<sup>61</sup> See InfoSoc, fn.59. The specific purpose statement is in recital 4.

<sup>62</sup> See a more thorough description of the 'EU copyright framework' in Commission and others p. 68-77

analysis, we will see how the originality requirement of the CJEU is at the core of these criteria and their application to Filip's case.

### 5.1.1 'Author' criterium

The term 'author' is the closest we come to a legal definition of the principle of human authorship, see section 5.2.2 *supra*. The need for the author to be human is implicit from the literal meaning of the words – without an 'author', there can be no 'work' to have copyright protection. In our anthropocentric judicial systems, rights to others than humans or possibly human-owned corporations also generally don't apply.<sup>63</sup> This interpretation of the literal word of the directive and context would stand weak against contradictory positive sources, but such contradictory legal sources are not found, and the scarcity of cases up to now where non-humans have made anything resembling artistic work can explain why the law is not more explicit on this point.

The 'InfoSoc' directive does not make explicit remarks about who or what can get copyright.<sup>64</sup> The directive gives rights for 'authors', which are not defined further. However, from context, it is possible to extrapolate a rule that this is reserved for humans, as it is part of a legal system and a legal culture that generally only gives rights (and duties) to humans – an *anthropocentric* system. A confirmation of this view can be found in the Painer judgement, elaborated *infra*, where a photographer's rights to a picture were considered. Any rights to the tool of the photographic camera itself were never subject, but more specifically, the CJEU endorsed the Advocate General's opinion that *only human creations* are protected.<sup>65</sup> This topic has been extensively covered in legal theory, and all conclusions seem to be *de lege lata* that nothing apart from humans can be 'author' as per the criterium of the law.<sup>66 67</sup> It is called the Human Authorship Requirement, and

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<sup>63</sup> See a comprehensive study of the famous case of David Slater where a monkey's rights to a photography is discussed with the EU perspective in Eleonora Rosati 'The Monkey Selfie case and the concept of authorship: an EU perspective' 12 Journal of Intellectual Property Law & Practice 973

<sup>64</sup> InfoSoc directive, especially art. 2, see fn. 59

<sup>65</sup> Opinion of Advocate General Trstenjak delivered on 12 April 2011, *Eva-Maria Painer v Standard VerlagsGmbH and Others*. Para. 121, Document 62010CC0145. Available at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62010CC0145> accessed 2023-04-26

<sup>66</sup> See e.g., Rogstad pp. 173-174

<sup>67</sup> Gervais also comments *de lege ferenda* how machines should not have incentives like copyright for executing their code, suggesting that copyright rules should not be changed to give machines rights, see Gervais section IV.B from p. 2085

is applicable both in the EU/EEA and the USA.<sup>68</sup> The AI software is not a candidate for ‘author’, and the relevant candidates must be identified.<sup>69</sup>

The human candidates for authorship will be assessed briefly, starting with the developer. The ‘black box’ functionality of the AI mentioned in chapter 3 makes proving the influence of the parties involved hard.<sup>70</sup> If there were anything suggesting that Midjourney’s developer’s creative choices are expressed the output (see the ‘work’ criterion *infra*), they could be considered ‘author’ given that other requirements are met. But section 4 of the terms of service (TOS) for Midjourney states that “*you own all Assets you create with the Services*”.<sup>71</sup> This can be misunderstood as suggesting that anything a user makes with Midjourney will be their intellectual property, implying copyright protection of all output. However, the Midjourney TOS addresses only the relation between the developer and the user’s side of the AI. To make the tool attractive to paying users, Midjourney proactively waives any claim they should have to the user in the instance that the output should include expressions that make the developer eligible as ‘author’. It is a contract describing who will have the rights between the producer and the user *if* the output is copyright protected.<sup>72</sup> As a paying user and contractual party, Filip owns the image and has the following copyright, *if* the image is copyright protected.

In this specific case, authors of the training input cannot be considered ‘author’ of the output because no one have identified specific elements in the output which they claim to be their original ‘work’. The journalist’s redaction of the signpost pictogram, by only adding his own short text in a standard typeface over it, is presumed to not make him author, because of a lack of expressing creative choices and negligible contribution (see ‘work’ and *de minimis* considerations, *infra*). The ‘author’ must be Filip, or no one (meaning that there would be no protection).

Is Filip the author of the image (fig. 2)? This question arises because the extent of Filip’s influence over the output is not obvious; much of it seems to be expressed not by Filip but instead because of the AI’s execution. We have a situation in which a human has some influence,

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<sup>68</sup> See Dan Burk ‘Thirty-Six Views of Copyright Authorship, By Jackson Pollock’ (59 Houston Law Review 1, 2020) especially p. 266

<sup>69</sup> This is a circular argument because the case is selected because of user authorship candidacy, which is the scope for the thesis. The reasoning is intended to explain the context of the authorship role.

<sup>70</sup> Ole-Andreas Rognstad and Birger Stuevold Lassen *Opphavsrett* (2. utgave. edn, Universitetsforlaget, 2019) p. 148

<sup>71</sup> Midjourney TOS available at <https://docs.midjourney.com/docs/terms-of-service> accessed 2023-05-04

<sup>72</sup> As a comparison, for the tool DALL-E 2: See OpenAI’s terms of use (TOU) section 3 A for comparison – “As between the parties and to the extent permitted by applicable law, you own all Input, and subject to your compliance with these Terms, OpenAI hereby assigns to you all its right, title and interest in and to Output. OpenAI may use Content as necessary to provide and maintain the Services”. (...) You may use the output as you want commercially but can’t hinder reproduction from OpenAI...any rights you might have in your image are assigned to OpenAI by the TOU.

but a tool also has influence. It seems obvious that Filip has *some* influence, because he guides the tool with his intention and volition through a lengthy process of *inter alia* entering prompts and selecting between versions for further iterations.<sup>73</sup> Otherwise, the AI would no longer be a tool in an AI-assisted production but an autonomous system, generating output independently.

It is easy to imagine even more automated AI software, activated when the user simply pushes a green button indicating that they wish for an image to be produced. Existing technology could then scour pre-destined news sites for today's headlines and use a randomly selected combination of those headlines as a text prompt for generating an image in a randomly selected style. The user can then willingly ("I want a picture") or accidentally ("I need to sit down") push the button, generate an image without the slightest idea of what the output might have as motive, objects and style. Such a "green button" process would output an image that without doubt express no creative choices from the user, only being a causal link like any monkey pressing the shutter release on a camera.<sup>74</sup> This lack of authorial intent seems insufficient for the role of an 'author' and relates closely the originality requirement described *infra*.

But we know that Filip gives the AI user input. The question is whether his influence, including authorial intent, is sufficient to make him 'author' of the 'work' in the legal sense. This is a kind of circular argument between these interrelated terms because a 'work' needs an 'author', which in turn must make a 'work' to be an 'author'. As the relevant candidate for 'author' is Filip, a human who has some influence on the production process, we should turn to the 'work' requirement.

### 5.1.2 'Work' criterium – the originality requirement

In this section you will see that 'work' refers to the *result* of a creative process, while 'originality' is a word used by the CJEU to describe the creative process itself. In essence, these terms are synonyms, because the 'work' status of the result depends on the creative process being 'original'.<sup>75 76 77</sup>

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<sup>73</sup> For a thorough analysis of an artist's influence on works, see Burk p. 321

<sup>74</sup> For comparison, see the scenario described in the article by Rosati

<sup>75</sup> Hugenholtz and Quintais p. 1196

<sup>76</sup> Rognstad and Lassen p. 180-192

<sup>77</sup> The Originality Requirement is called *verksbøydokravet* in Norwegian, and is familiarly made law through *Åndsverksloven* (LOV-2018-06-15-40) § 2 which speaks about 'works'; *verk*.

Not all domains of creative effort can result in ‘work’.<sup>78 79</sup> A start for considering whether figure 2 can have work status can be to analyze if the law allows the format of the image as ‘work’. In the Berne convention, “*literary and artistic works include every production in the literary, scientific and artistic domain, whatever the mode or form of its expression may be*”.<sup>80</sup> While the European Union is not party to the convention, its member states are parties to the WIPO Copyright Treaty, which the InfoSoc directive intends to implement.<sup>81 82</sup> With this inclusive definition as well as uniform case law protecting digital images with copyright, a digital image such as figure 2 can be ‘work’.<sup>83</sup>

If figure 2 is ‘work’ (meets the originality requirement) rests on two conditions, nearly identically given in both the judgement *Funke Medien C-469/17*, para 19-20, and the judgement *Levola Hengelo C-310/17* para 35-37, both including substantial references to established case law.

The first condition for originality is that the subject matter must be “*original in the sense that it is its author’s own intellectual creation*”.<sup>84</sup>

This can be understood as a requirement that the subject matter cannot only be the result of machine: not completely automatically generated, some human activity must be involved. Also, the word ‘intellectual’ suggests that the human activity has a threshold requiring some cognitive activity which should be more than rudimentary, but apart from that, it is not clear what involvement this condition requires from the author, like having an idea, or doing some acts of fixating creative choices into a medium. Ideas are not protected.<sup>85</sup> It seems reasonable to view this first condition as requiring of intellectual activity what is called ‘authorial intent’, and keep it separate from the second of these cumulative conditions.<sup>86 87</sup>

If Filip had an accident, falling on his computer and making Midjourney execute a randomly entered prompt, this first condition would not be met. Though he would be involved in the casual chain resulting in image production, it would not be an ‘intellectual’ creation, more like

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<sup>78</sup> See e.g., TV-program concepts, described in Rognstad and Lassen ch. 5

<sup>79</sup> See also e.g., judgement *Levola Hengelo C-310/17* where the taste of a cheese was not considered a domain for EU copyright.

<sup>80</sup> See the judgement *C-310/17 Levola Hengelo* para 39, with in turn references article 2(1) of the Berne Convention (Berne Convention for the Protection of Literary and Artistic Works of September 9, 1886, completed at Paris on May 4, 1896, revised at Berlin on November 13, 1908, completed at Berne on March 20, 1914, revised at Rome on June 2, 1928, revised at Brussels on June 26, 1948, and revised at Stockholm on July 14, 1967 (with Protocol regarding developing countries). Done at Stockholm on 14 July 1967)

<sup>81</sup> *Ibid.* para 38

<sup>82</sup> Confirmed in the judgements *Luksan C-277/10*, *DR and TV2 Danmark C-510/10*

<sup>83</sup> This is called the ‘domain test’ on page 37

<sup>84</sup> See judgements *Funke Medien C-469/17* para 19, and *Levola Hengelo C-310/17* para 36

<sup>85</sup> See e.g., Rognstad p. 184

<sup>86</sup> *Ibid.* p. 186

<sup>87</sup> *Burk* p. 279



spilling a bucket of paint by accident. But Filip instead had a vision of an image and began producing it because he wanted to. He wrote text prompts clearly influenced by his vision, manifesting his authorial intent through creative choices so that the AI could execute its program under its influence. The first condition is fulfilled.

The second condition for originality is that ‘work’ must be “*the expression of the author’s own intellectual creation*”, which is the case if “*the author was able to express his creative abilities in the production of the work by making free and creative choices*”.<sup>88</sup>

The phrase ‘*own intellectual creation*’ is familiar from the first condition. The CJEU is not explicitly commenting what fulfils the first and the second condition separately in the judgements.<sup>89</sup> In light of the second condition it is easier to understand what separates the conditions. Through the statements about the conditions it is possible to understand the concept of ‘intellectual’ in the first condition as both having ideas and planning how to turn them into a ‘work’, which would explain why it is presented as a separate condition. This is supported by the supplementary phrase about ‘*express[ing] creative abilities*’ indicating that the creative choices are fixated in the sense that they influence the result through expression.

Such analysis of words and phrases from judgements does make weaker arguments than if it was based on treaty or statute law. However as has been shown; these words and phrases are repeated in many judgements, suggesting that the phrasing is carefully selected. Also, these seem to be the most important legal sources on the subject. Still, it would make such legal analysis more effective and certain if the legal sources explained the conditions more thoroughly.

In the following there is a presumption that ‘intellectual creation’ in the first condition is the artist’s intention to make a ‘work’ from a certain idea, while *how* these ideas are fixed into the medium is described in the second condition. The second condition is not applied uniformly regardless of format. CJEU has elaborated on the norm with stating different requirements depending on the room for creative expression in the format, stating that the artist must make actual use of this room by making expressions.

In the joined cases C-403/08 and C-429/08, CJEU made a concrete assessment of whether a sporting event can constitute an intellectual creation which qualifies as a ‘work’. The Court believed sporting events could not constitute works as they are governed by rules of play leaving

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<sup>88</sup> See judgements *Funke Medien* C-469/17 para 20, and *Levola Hengelo* C-310/17 para 37

<sup>89</sup> *Ibid*, regarding the entire judgements

no “*scope for creative freedom as intended under copyright law*”.<sup>90</sup> In other words, there was no room for expression in this case, because the game followed a set of fixed rules.

An example of the contrary is found in the Painer judgement C-145/10. The case regards a portrait photography made by photographer Painer, which a set of newspapers and magazines believed not to be protected by copyright due to the lack of creative freedom that the medium offers. Essentially, it was claimed that the format of portrait photography was so limiting on the creative choices of the author that no originality was possible, as was the case in the sporting event mentioned *supra*.<sup>91</sup> <sup>92</sup> However, in the case of Painer, the CJEU gave numerous statements that help us identify a norm for Filip’s case. An intellectual creation is “*an author’s own if it reflects the author’s personality*”, meaning the author has copyright protection.<sup>93</sup> This is elaborated as “*express[ing] creative abilities in the production of the work by making free and creative choices*”, confirming the connection to the second condition.<sup>94</sup> The CJEU then proceeds to what creative choices Painer has made within the format, such as background, pose, lighting and development techniques. The CJEU explains how this interpretation of the InfoSoc directive article 2(a) shall be given a “broad interpretation” with reference to the Infopaq case paragraph 43, which can be understood so that even creative choices that might seem trivial should be considered.<sup>95</sup> <sup>96</sup> It is also established here that any ‘work’ has protection that is not inferior to other works, regardless of format.<sup>97</sup>

Still, a problem regarding the expressions in the output is not clarified through the Painer judgement. As Filip’s case regards use of AI, which can generate visual elements without specific description from the user, the analysis would seem lacking if this was not addressed.<sup>98</sup> There seems to be some confusion about how the implications on copyright from AI generated elements of the image.<sup>99</sup> But there is some guidance from another CJEU judgement that we can turn to.

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<sup>90</sup> See the joined cases C-403/08 and C-429/08 judgement para 98

<sup>91</sup> Ibid.

<sup>92</sup> This norm is consistent also in Funke Medien C-469/17 para 24

<sup>93</sup> See the judgement C-145/10 para 88

<sup>94</sup> See the judgement *ibid.* para 89

<sup>95</sup> See the judgement *ibid.* para 96

<sup>96</sup> This is the main point of the judgement, with high relevance for AI-generated works, see Rognstad p. 178

<sup>97</sup> See the judgement *ibid.* para 99

<sup>98</sup> See the discussion in ch. 3

<sup>99</sup> See opinions such as <https://creativecommons.org/2023/02/21/this-is-not-a-bicycle-human-creativity-and-generative-ai/> accessed 2023-05-07

The ‘Infopaq’ judgement C-5/08 of the CJEU regarded a question of reproduction of short strings of words from newspaper articles. Infopaq International was a media monitoring and analysis business who scanned Danish daily newspapers and processed them digitally so that the word extracts of 11 words could be shared with customers, including the requested word and the five words before and after. In this way, customers of Infopaq were able to see if news about topics of their interest were printed without buying all newspapers.<sup>100</sup> The CJEU decided that individual words are not elements covered by the protection, but printing a string of 11 words can constitute ‘reproduction’ as regulated in Infosoc article 2.<sup>101</sup> The criterion that the CJEU gives here for the printing to be an infringement of a ‘work’, is that the *‘elements thus reproduced are the expression of the intellectual creation of their author’*, repeating the essence of the aforementioned first condition.<sup>102</sup> In this judgement there are some interesting parallels in the subject matter and other CJEU statements that can elaborate on the first condition for deciding in Filip’s case. It is *‘only through the choice, sequence and combination of those words that the author may express is creativity in an original manner and achieve a result which is an intellectual creation’*.<sup>103</sup>

This judgement, concerning copyright to text, has similarities to creating a collage. If you pick up sticks and stones and arrange them into a collage, the collage may be protected as a whole, even though the individual objects are unprotectable elements of nature.<sup>104</sup> Similarly, using AI-generated elements in creating a larger motif that is shaped in large by an author’s creative choices and the AI assisting. If your arrangement of sticks and stones is identical to your neighbor’s project, it is not original. And if you crash into your pile of sticks and stones while sleepwalking, the resulting ‘composition’ can, taken in isolation, hardly be seen as an expression of creativity but merely an accident.<sup>105</sup> Something equally unprotectable taken in isolation are *the individual visual elements in an AI output image*.<sup>106</sup> The Infopaq judgement regards another artistic domain (copyright to text), which might be seen to weaken its applicability to our case. Still, it regards ‘work’ and specifically addresses rights to a composition made of unprotectable elements, and the CJEU is very general in these terms, suggesting that the norm can apply to other artistic domains as well. This is strengthened by the fact that the judgement the first condition ‘own

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<sup>100</sup> See the judgement C-5/08 para 13-21

<sup>101</sup> Ibid., para 45-46 and 51

<sup>102</sup> See the judgement *ibid.*, para 51

<sup>103</sup> See the judgement *ibid.*, para 45

<sup>104</sup> Illustrated also in Norwegian judgement Rt. 2013 s. 832 para 44

<sup>105</sup> Scenarios such as this is described to great extent in Burk , and this one in particular is similar to view 8, pp. 282-283. While Burk writes about U.S. law, the basic principles of copyright law is similar enough for use in this thesis.

<sup>106</sup> See section 3

intellectual creation’, consistent with other CJEU judgements in other creative domains of food taste and clothes design, implying that it is a broad norm for copyright.<sup>107</sup>

In light of these contributions from the CJEU regarding the ‘work’ requirement, we can first conclude that an arrangement of unprotectable, AI-generated individual elements can make a protectable whole, suggesting that the image (fig. 2) is protectable even without the signpost pictogram. A specified question for applying the remaining part of the second condition can be: Has Filip reflected his personality in the image by making free and creative choices, utilizing the specific room for expressing his creative abilities that the digital image format gives? If so, Filip fulfills the second condition.

Filip has chosen the tool Midjourney among others he is familiar with, and the aspect ratio 2:3, which is also included in prompt. Midjourney makes it obvious that prompts may include creative choices and not just ideas, as AR and weight of each word can be included in the prompt. While this extends beyond the mere idea of a picture, these creative choices viewed in isolation make very little use of the creative space that the digital image medium offers.

Filip writes several prompts, doing what he calls A/B probing. Words can both represent ideas, and creative choices. A typical idea can be: “people flying”. A typical set of creative choices could be: *“center picture above signpost a person is floating in the air with face up from the ground, knees and elbows slightly bent, wind in curly hair, face not visible, dark colored loose clothing”*. However, the relevant version of Midjourney does not understand complete sentences, so the tool has severe limitations on how precisely it can apply instructions to an output, like a spray can. “People flying” is, taken in isolation, just an idea and no creative choice, and would make a “AI generated output”. But a single prompt is not Filip’s entire work process, as he makes creative choices based on his authorial intent described in section 4.2, executing use of the tool in many iterations until he is satisfied with the result. The choices between variations of the picture and repeated selection between results of A/B probing makes for an “AI-assisted production”.<sup>108</sup>

While using the AI, Filip composed and evaluated the image in its entirety. He was not concerned with individual parts on a more detailed level, with a few exceptions that he edited with other tools later (notably, the signpost pictogram and the hair). He can be said to have combined

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<sup>107</sup> See the judgements *Levola Hengelo* C-310/17 para 36, and *Cofemel* C-683/17 para 29

<sup>108</sup> See a discussion on Kummer’s presentation theory and selection in EU *acquis* in Commission and others p. 81

unprotectable AI-generated individual elements of the image into a composition with AI assisting his intellectual process.

For these reasons, Filip must be seen to have reflected his personality in the image by making several free and creative choices. Regarding “*utilizing the specific room for expressing his creative abilities that the digital image format gives*”, we can see that Filip *has* utilized the room for expressing creative choices, but using this to conclude that he has copyright seems to be disregarding an implicit requirement of how much influence his expressed free and creative choices needs to have. As the AI has contributed a substantial part of what we can see in the image, we seemingly need to consider if Filip surpass such a lower threshold for ‘work’. We can see from the case description that Filip has made some choices, but whether they are too trivial for work status could be problematic.

### 5.1.3 De minimis

While Filip has met the criteriums for ‘work’, it can be claimed that the output is not really an expression of Filip’s creative choices because those expressions form a negligible part of the output.

A threshold for what can be subject to application of the law is traditionally called *de minimis*, short for *de minimis non curat praetor*, meaning that *trivial things are not the concern of the law*. This is a principle used in many fields of law preserving the judicial system for matters which have a certain importance.<sup>109</sup> In copyright law we have seen certain *de minimis* norms introduced in specific areas, such as the amount of people required to be ‘the public’ in InfoSoc article 3, and ‘incidental inclusion’ in InfoSoc article 5(3) litra (i).

CJEU has to this day has not defined a generic *de minimis* principle for copyright law. As discussed *supra*, there is no qualitative evaluation of the creative expressions, only a legal requirement of expressing creative choices, and equal protection for all ‘works’.<sup>110</sup>

It is possible to interpret such a *de minimis* principle from the originality requirement. That could entail viewing the entirety of the product in question and ask whether the expressed elements resulting from the author’s creative choices make a notable impact overall. If not, the output could be viewed as not the ‘author’s intellectual creation’ but something that for the most part

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<sup>109</sup> Rognstad and Lassen pp. 123 and 183

<sup>110</sup> See the judgement C-145/10, para 99 in particular

originates from something else. The author would then not be “*express[ing] creative abilities in the production of the work by making free and creative choices*”,<sup>111</sup> The Painer judgement can be understood in such a way, *inter alia* because of the phrasing “*the author of a portrait photographer can stamp the work with his personal touch*”.<sup>112</sup> The originality requirement should be given a broad interpretation, and the resulting level of creativity required is low.<sup>113 114</sup>

Some support for such an interpretation can be found in the Pelham judgement, which regards samples of phonograms (protected by related rights, also covered by InfoSoc directive). A user exercising his artistic freedom may take a sound sample from a phonogram to use it as long as it is reproduced in a “*modified form unrecognizable to the ear*”.<sup>115</sup>

Advocate General Szpunar’s opinion in the Pelham Judgement gives comments specifically about copyright when comparing to phonograms. “*In the case of a work, it is possible to distinguish the elements which may not be protected, such as words, sounds, colors etc., from the subject-matter which may be protected in the form of the original arrangement of those elements*”.<sup>116</sup> Szpunar also states that identifying a *de minimis* threshold “*(...) poses serious practical difficulties associated with its application*”, asking if the threshold should be “*assessed in relation to the source phonogram, the target work or both?*”, and considers both the qualitative and quantitative impact of the relevant expressed creative choices.<sup>117</sup> These paragraphs are not specifically commented in the judgement.

These interesting sources, particularly the opinion of AG Szpunar, does not have sufficient weight to decide the case when compared to the lack of an established general *de minimis* principle of copyright law. But only as an illustration, and not relevant for the result, an applicable *de minimis* principle can be briefly presumed. As Szpunar points out it is practically difficult to apply without more guidance, as can be briefly illustrated. Without a more clearly determined threshold, we can as an example require both qualitative and quantitative aspects of his expressed creative choices to be more than ‘negligible’ in the target ‘work’.

Comparing the relative quantitative impact of Filip’s expressions to the parts that he has not made active creative choices is difficult. With the signpost pictogram (fig. 1) redacted, it is hard to determine what share of the remaining image (fig. 2) is expressions of creative choices and which

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<sup>111</sup> See the judgement *ibid.* para 89

<sup>112</sup> Underscored for the purpose of this thesis. See the judgement *ibid.* para 92

<sup>113</sup> See the judgement C-5/08 para 43

<sup>114</sup> Hugenholtz and Quintais p. 1198

<sup>115</sup> See the judgement C-476/17 para 31-39

<sup>116</sup> See AG Szpunar, Opinion in *Pelham GmbH v Hutter* C-476/17 (ECLI:EU:C:2018:1002) para 30

<sup>117</sup> *Ibid.*, para 32

are not. It is hard to state that any element in the picture is not chosen and refined through the many rounds of iterations. Because of Filip's creative process, where *inter alia* he has generated and selected a color tone, viewing angle and sky background, Filip's choices have to some extent impacted the entire image (fig. 2). In a qualitative sense as in how it makes the whole motif meaningful, the contribution of Filip's expressed choices is much less because there no longer is a signpost prohibition as context for the people flying. It is hard to say exactly how or how much Filip's remaining choices expressed affect the image, but we can get some indication by reviewing specific choices. The edit of the hair is a very small part of the image, it could be quantitatively negligible. But in a qualitative sense it is consciously added by the author to make an impression of a more diverse group of flying people, and it seems quite unreasonable to consider this unimportant as Filip saw it as important enough to make the effort to edit. The text prompt has not dictated specifically where any of the clouds or people we see should be placed or in what orientation they should be. The text prompt has, through Filip's documented process, been seen to affect the motif of the image. We have also seen that such a prompt can lead to many different results. The text prompt was not the single creative choice that led to the motif we see in figure 2; Filip also chose between many iterative series of variations based on the same text prompt. The motif of the image, qualitatively and quantitatively affecting the image in its entirety, is also an expression of Filip's creative choices.

However, as the applied *de minimis* principle was only an illustration, it will not influence the result of Filip's case.

In a case such as Filip's rights to the image (figure 2) there are several reasons for considering both these aspects more than 'negligible', as several of them can be said to affect the entire impression of the image (fig. 2). But current legal sources do not give sufficient confirmation of an applicable *de minimis* principle, and neither is it clear how a such threshold would be set. This currently cannot have any effect on the outcome of a legal case.

Figure 2 is followingly "*original in the sense that it is its author's own intellectual work*" and Filip was "*able to express his creative abilities in the production of the work by making free and creative choices*". The conditions established by the CJEU for the originality requirement are fulfilled, and consequently also the conditions in InfoSoc article 2(a). The redacted version of 'Flying' in fig. 2 is Filip's work and he is the author, giving him exclusive right to reproduction. The Journalist has violated Filip's exclusive right by reproducing the image on his website without authorization.

## 5.2 Contributions from legal theory in how to apply the originality requirement

As mentioned *infra*, AI-aided production of images is special in how so many visual elements can come from the AI while often being indistinguishable from human creativity. At the core of this problem comes the originality requirement. An example of how to solve a practical case using legal sources is given in 5.3. Two contributions from legal theory have been identified, describing how the legal sources can be systematically applied to AI cases.<sup>118</sup> Central among these is how the originality requirement is suggested to be applied. Because they have significantly different approaches, and reviewing them can give some perspective for answering the research question, they are briefly presented in this section. Filip's case is still used as a practical context.

### 5.2.1 The 4-step model

The model is introduced in a report for the European Commission, as well as a separate academic paper from the same authors on the same topic.<sup>119</sup> <sup>120</sup> These contributions give a doctrinal legal analysis to “*scrutinize the concepts of ‘work’, ‘originality’ and ‘creative freedom’*” from EU acquis, before presenting a test in 4-steps to assess whether AI-assisted output qualifies for copyright protection.<sup>121</sup> These steps are in essence a suggested procedure based on norms from EU acquis.

The first step asks whether the output is a “*production in the (...) artistic domain*”, as part of considering whether the output in question falls within the inclusive definition of ‘work’ of the law.<sup>122</sup> This has been elaborated *supra*.<sup>123</sup> For Filip's sake this is fulfilled, as a digital image is a production in the artistic domain. The domain test is passed.

The second step asks if the image a result of “*human intellectual effort*”. It builds on the concept of ‘author’, the requirement of human authorship and ‘intellectual’ as mentioned *supra*.<sup>124</sup> Meanwhile, the human contribution must meet the originality requirement (creative choices, expressed)

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<sup>118</sup> See the description of literature search on p. 7

<sup>119</sup> Commission and others

<sup>120</sup> Hugenholtz and Quintais

<sup>121</sup> Ibid p. 1190

<sup>122</sup> Ibid p. 1200

<sup>123</sup> See p. 29

<sup>124</sup> See p. 30



which is in step 3 and 4.<sup>125</sup> By doing this, it seems that the intention of step 2 is *not* to consider the intellectual activity of making creative choices, which means that step 2 is limited to concerning what is described *supra* as the first condition for originality.<sup>126</sup> This is supported by the statement *de lege lata* that “*a natural person’s involvement with the AI-assisted output – however remote – is sufficient for it to qualify as an intellectual creation*”, which the authors *de lege ferenda* consider a problematic side of current EU acquis.<sup>127</sup> What remains of ‘intellectual’ in step 2 is not described explicitly in the article or report, but there is an impression that the authors conclude implicitly that the criterium from the CJEU might as well be reduced to “*human effort*”.

The report also states about the human involvement that “*it is hard to conceive of content that is generated through AI that involves no human agency whatsoever*”.<sup>128</sup> Under a presumption that the developer side of the AI is not considered in this statement, this could be a sign that the report is getting outdated, as the “green button” scenario described *supra* shows.<sup>129</sup> As stated in the analysis in section 5.1, it is obvious that Filip is a human who had some kind of intellectual effort resulting in an image, and this step is also passed.

The third step raises the following question: *Has the user made creative choices?* The requirement of sufficient creative space is central to the presentation.<sup>130</sup> How this creative space is used is then presented as an iterative process where creative choices can be applied. First, the *conception phase* with important creative conceptual choices like illustrated in the Painer case before the picture is taken.<sup>131</sup> In the *execution phase*, the AI does most of the work, in contrast to traditional creation where the author has a central role. In the Painer case, the machine that is the camera similarly does most of the execution. The report describes how use of AI gives the user less control of the execution phase to the extent that it “*strains the classification as a tool*”.<sup>132</sup> While “*the AI system will normally play a dominant role in the creative process*”, there is an important note on how the user may exercise creative choices at the execution stage by “*incrementally guiding the AI system towards the desired output*”.<sup>133</sup> This seems particularly relevant when the process includes many iterations like Filip does, where he describes “A/B probing” which guides the AI through many series of executions. The final *redaction phase* is introduced with reference to post-processing in the Painer

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<sup>125</sup> Hugenholtz and Quintais p. 1196

<sup>126</sup> See p. 29

<sup>127</sup> Commission and others p. 78

<sup>128</sup> Ibid. p. 78

<sup>129</sup> See p. 28

<sup>130</sup> See p. 31

<sup>131</sup> Hugenholtz and Quintais p. 1202

<sup>132</sup> Commission and others p. 80

<sup>133</sup> Ibid. p. 80

case, where CJEU pointed to many examples of creative choices. There is an emphasis on how personal selection contributes to finding originality in an AI-assisted output.<sup>134</sup> Filip seems to pass the third stage because of his creative choices discussed *supra*.

The fourth step asks if the creative choices of the author are ‘*expressed*’ in the output.<sup>135</sup> This is familiar from the second condition of the originality requirement mentioned *supra*.<sup>136</sup> With a reference to the Levola Hengelo case, the report states that “*this requirement rules out largely subjective subject matter that cannot be expressed with sufficient precision*”. The Levola Hengelo case concerns the rights to a certain flavor of cheese, and the InfoSoc directive is seen as “*precluding the taste of a food product from being protected by copyright*”.<sup>137</sup> It is not clear how this is separated from the domain test in the first step.

The authors proceed to derive a perquisite of ‘*general authorial intent*’ from the term ‘*expressed*’.<sup>138</sup> While authorial intent is considered in the fourth stage, it is not entirely clear how this is supposed to relate to the conception in the third stage phase or the “human intellectual effort” of the second stage. This poses questions for the application of the originality requirement. Within the scope of this authorial intent, the user does not need to precisely predict the outcome, “*leaving room for unintended expressive features*”.<sup>139</sup> A pressing question is how big this room is. The room for unintended expressive features can be seen as the remaining, unused part of the room for creative choices (step 3). As discussed, utilizing the room for creative choices that exists in the given format is key for originality.<sup>140</sup> <sup>141</sup> The various parts of the format can be filled with unintended expressive features, or by expressions resulting more directly from creative choices. So, it seems the user of an AI system does not need to use the entire room for creative freedom. How small a part of the format that can be filled with expressions of creative choices, relative to the unintended expressive features that presumably must fill the rest, is unanswered.

Filip has expressed his creative choices in several ways, in line with his stated authorial intent, so he also passes the fourth step. If Filip were to use a spray can with a wide nozzle on a very small canvas, his creative choices in how he carefully guides the can over the canvas would make very

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<sup>134</sup> Commission and others

<sup>135</sup> Ibid p. 82

<sup>136</sup> See p. 30

<sup>137</sup> See the judgement C-310/17 para 46

<sup>138</sup> See the discussion of *authorial intent* at p. 28

<sup>139</sup> Commission and others p. 75

<sup>140</sup> See p. 31

<sup>141</sup> See the judgement C-145/10 para 85

little impact compared to the flow of unpredictably placed paint droplets.<sup>142</sup> The canvas would quickly become so covered in unintended expressive features that Filip's choices would be negligible. The same applies when Filip leaves room for the AI to fill the image with generated elements, we don't know just how little expression of his creative choices that can be the minimum required. Current EU acquis does not sufficiently answer these questions, and the four-step test does not raise them. In this regard, the report (and article) leaves out a central part of the problem, concluding *inter alia* that “current EU copyright rules are generally sufficiently flexible to deal with the challenges posed by AI-assisted outputs”.

### 5.2.2 Two stages and the causality test

To analyze the room for randomness separately, Rognstad suggests two ‘stages’; Creativity stage and Causality stage.<sup>143</sup>

The first stage requires free and creative choices, like the third step of the four-step-test and the first condition of the originality requirement *supra*.<sup>144</sup> Here, Rognstad suggests that authorial intent is relevant, with little room for randomness in determining whether the author has performed free and creative choices. Rognstad gives examples of how a photographer may lose control of a camera accidentally or allowing it to be influenced by natural forces intentionally.<sup>145</sup>

In the second Causality stage, randomness is accepted because the authors do not have to predict the outcome of their creative choices. Intent is not relevant for the second stage, as explained “no incidents or circumstances intervene[s] in the process between [author's] free and creative choices other than natural forces and physical phenomena”.<sup>146</sup> This regards the “causal link between free and creative choices and expression”, regarding the second condition of the originality requirement.<sup>147</sup> A monkey walking into a scenery while photographed is an unintended feature that may randomly occur because of the camera's placement in the jungle.

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<sup>142</sup> A recent US Copyright decision which emphasized a decisive importance of predictability in the result of expressing creative choices using Midjourney could suggest that Jackson Pollock also did not have copyright to his paint-splashing works, or conversely, that deciding copyright matters with AI is so novel that it is not sufficiently understood in legal institutions yet. The decision letter also includes a useful description of how Midjourney AI is used, found at <https://www.copyright.gov/docs/zarya-of-the-dawn.pdf> accessed 2023-04-26

<sup>143</sup> Rognstad p. 186

<sup>144</sup> See p. 29

<sup>145</sup> Rognstad p. 187

<sup>146</sup> Ibid p. 186

<sup>147</sup> See p. 30

These stages can be seen both as an alternative to the three phases (conception, execution, redaction) mentioned in the 4-step test, while simultaneously concerning much of the same as steps 3 and 4. While the stages can be part of an iterative process, note that the creativity stage applies while making creative choices typical of the conception phase (setting lighting, aspect ratio etc.), execution (text prompting, shooting photos) and in the redaction phase (blurring certain parts of a photo with Photoshop, drawing longer hair on a depicted person).

Correspondingly, the causality stage happens as these choices are fixated into the output, with some component of randomness. At the core of Rognstad's argument is that intent is necessary when concerning creative choices, but not relevant for the entirely causal question of expression.

While this model neither address the question of how much influence the creative choices need to have on the output, there is a clear presentation of where we should look for intent, and where we should accept uncertainty. This is important because the originality requirement regards the creative process. When applying the originality requirement to a case of AI-aided image production, Filip's authorial intent is stated at the start, but becomes more conscious through the iterations of making variations and A/B probing with Midjourney. The visual elements that have a causal connection to the choices become relevant, and this makes the analysis a bit easier. The arrangement of people floating around the sign probably is protected, because that arrangement is specifically curated and chosen through Filip's process, curated using dozens of variants and generations. In figure 1 and 2, each depicted human taken in isolation probably is not protected, even though they are tinted slightly yellow through one of Filip's creative choices.

As the journalist uses figure 2, and even without the pictogram sign, it includes the free and expressive choices of Filip to such an extent that his personal style is reflected in the work. If the journalist was to extract a portion of the image with a single depicted human, it would probably be within his rights, because that can hardly be seen as an expression of Filip's choices. The aspect ratio is lost, the arrangement of the humans in combination is lost, it is no longer representative of Filip's general authorial intent; it is just a computer-generated image of a human. Here, the causal chain of Filip's creative choices has been broken, which is better understood in the light of Rognstad's two phase model. If the extracted depiction of a person was the one redacted with longer hair, the influence of Filip's creative choice can be seriously questioned because it no longer makes a diverse group of people but only a unremarkable person with long hair. This is at limits of the law, which can be seen in relation to the lack of a general *de minimis* principle of copyright.

### 5.2.3 Legal policy considerations

It seems that the relevance of *de minimis* is an undervalued and underdeveloped concept in copyright, made more relevant by use of AI. Developing legal norms on a general *de minimis* principle in EU copyright law, including how to set a *de minimis* threshold, could increase legal certainty about the assessment of copyright to AI-aided works and add significant guidance to the application of the originality requirement, allowing for reaching the stated goals of increased legal certainty and high level of protection.<sup>148</sup>

The condition that a ‘work’ should be an ‘intellectual creation’ should be further specified in the copyright *acquis* to avoid confusion and increase predictability. As it stands, this could be interpreted to suggest a whole range of cognitive activities from having ideas to making creative choices, and the meaning of the first condition when seen in relation to the partially identical second condition for ‘work’ seems implicit. Interpreting a separate condition of ‘authorial intent’, alongside the condition of “expression of free and creative choices” seem to make the originality requirement easier to apply consistently to cases of AI use.

The four-step test seem to lack a good explanation of the relationships between authorial intent, creative choices, and the relative part they can hold in the output between the ‘black box’ unexplainable AI generated content. It seems questionable how suitable this test is for determining if the originality requirement is met when AI-assisted output can hold quantitatively and qualitatively very much more than the user’s input.

The newer two-stage test seems better suited for handling the room for random expressions that are prominent in AI works. While this model neither address the question of how much influence the creative choices need to have on the output, there is a clear presentation of where we should look for intent, and where we should accept uncertainty. This is important because the originality requirement regards the creative process.

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<sup>148</sup> See p. 23

# 6 Literature

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# 7 List of figures

Fig. 1 Flying by Philipp Lenssen © 2022, reproduced with license from the artist, Available at <http://aiandart.club/process/> accessed 2023-01-10

Fig. 2 – redacted version based on fig. 1, see fig. 1.