

## i-call working paper

No. 2025/01

# Expecting the *Unexpected*: Copyright's Normativity in the Dynamic Reality of the Information Age

Alexander B. Rom\*

APRIL 2025

### ABSTRACT

The information age of the 21<sup>st</sup> century is characterized by accelerating technological change continuously disrupting the status quo of an increasingly complex society. In recent years, particularly big strides in artificial intelligence (AI) technology have paved the way for an array of popular applications in the field of generative AI (GenAI). The chatbots, image and video generators produced by GenAI impacted our everyday lives immediately, becoming the focal point of much public debate. The training of the models underlying GenAI is particularly controversial from a copyright perspective: a flood of lawsuits challenging questionable copying practices inherent to the training process are hitting US courts. As societal pressure mounts, courts are forced to look far beyond the letter of the law to find socially adequate outcomes through their judgments in the absence of guiding legal norms, bypassing the due process of legislation. Looking back at how copyright law received disruptive technologies in the past, an increasing shift from legislation to adjudication becomes apparent. By employing a systems theory perspective, we can observe how the legal system is being challenged by the sheer pace of innovation. This paper attempts to diagnose the current strains to copyright law and discusses why future copyright orders must be reshaped to balance a tension between the flexible adaptability and rigid predictability required from the law.

### KEY WORDS

Legal theory; legal sociology; copyright; generative artificial intelligence; fair use; intellectual property; comparative legal studies; normative expectations.

\*Alexander B. Rom, MLaw, is an academic assistant and PhD student at the chair of Prof. Dr. iur. Christoph Beat Graber at the University of Zurich. Comments are appreciated and welcome at alexander.rom@ius.uzh.ch. Further analyses on this subject will be published in the upcoming 26th volume of 'APARIUZ', to be released Oct 2025.

---

I-CALL WORKING PAPERS are the result of research that takes place at the Chair for Legal Sociology and Media Law (Professor C.B. Graber) at the University of Zurich. The papers have been peer-reviewed.

SUGGESTED CITATION: Alexander B. Rom, 'Expecting the *Unexpected*: Copyright's Normativity in the Dynamic Reality of the Information Age', *i-call Working Paper No. 01 (2025)*, Zurich, Switzerland: University of Zurich.

Published by:  
i-call, Information • Communication • Art • Law Lab at the University of Zurich  
Professor Christoph B. Graber, PhD  
Chair for Legal Sociology and Media Law  
University of Zurich, Faculty of Law  
Treichlerstrasse 10  
8032 Zurich  
Switzerland

ISSN 1664-0144  
© Information • Communication • Art • Law Lab, Switzerland

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, mechanical, photocopying, recording or otherwise, without prior written permission of the publisher.

Permission to use this content must be obtained from the copyright owner.

---

## **EXPECTING THE *UNEXPECTED*: COPYRIGHT'S NORMATIVITY IN THE DYNAMIC REALITY OF THE INFORMATION AGE**

### **EXPECTING THE *UNEXPECTED*: COPYRIGHT'S NORMATIVITY IN THE DYNAMIC REALITY OF THE INFORMATION AGE 3**

#### **1. INTRODUCTORY REMARKS AND GENERAL CONTEXT 4**

1.1 INTRODUCTION 4

1.2 WHAT IS GENAI AND HOW DOES IT AFFECT COPYRIGHT LAW? 5

#### **2. ANATOMY OF A LEGAL UNCERTAINTY: ANDERSEN V. STABILITY AI 7**

2.1 WHAT MAKES THIS CASE NOTEWORTHY 7

2.2 THE DISPUTE AND THE COMPETING ARGUMENTS 8

2.3 THE ACADEMIC AND PUBLIC DISCOURSE TO DATE 9

#### **3. COURTS ASSESSING SOCIAL ADEQUACY AND IMPACT INSTEAD OF WRITTEN LAW: THE BGH IN THUMBNAI LS 12**

3.1 THE BGH'S SEARCH ENGINE PRIVILEGE 12

3.2 A CRITICAL ASSESSMENT OF THE BGH'S RULINGS 13

3.3 COPYRIGHT LAW AS A BALANCING ACT 14

#### **4. A SYSTEMS THEORETICAL DESCRIPTION OF THE CURRENT STATE OF COPYRIGHT LAW 15**

4.1 THE FUNCTIONAL DIFFERENTIATION OF SOCIAL SYSTEMS AS A RESPONSE  
TO SOCIETAL COMPLEXITY 15

4.2 NORMATIVE EXPECTATIONS IN THE DYNAMIC REALITY OF THE  
INFORMATION AGE 17

4.3 THE FUTURE OF COPYRIGHT LAW – THE END OF NORMATIVITY AS WE  
KNOW IT? 19

#### **5. OUTLOOK 21**

# 1. INTRODUCTORY REMARKS AND GENERAL CONTEXT

## 1.1 INTRODUCTION

A common narrative persists that the law is falling behind the technological realities of the information age. The unpredictable, accelerating dynamics of digital progress do indeed harbor uncertainty.<sup>1</sup> In the highly complex network society of the 21<sup>st</sup> century characterized by accelerating change – what is valid and expected today may be obsolete tomorrow.<sup>2</sup> At the time of writing, this issue is made particularly apparent by the wide-spread proliferation of artificial intelligence (AI). AI-based programs are penetrating all areas of society. The intelligent automation and generation they provide has the potential to impact society profoundly in a scope similar to the paradigm shift brought on by the industrial revolution.<sup>3</sup>

AI however does not come without societal risks: questions of accountability and liability regarding failures of AI systems, algorithmic discrimination and the spread of disinformation, anti-competitive tendencies and mass redundancies as a result of economic rationalization, as well as a lack of transparency behind the decision-making and training processes of models are just general categorizations of a multitude of conundrums facing society. How must the legal system manage or regulate these emerging issues? While many of the above-mentioned areas of tension are being debated in legislative and academic arenas, some specific legal questions have begun to trickle down to the judiciary and are currently being litigated in courts.

In particular, copyright disputes regarding the popular applications of generative artificial intelligence (GenAI) are keeping the judiciary busy: a plethora of lawsuits alleging copyright infringement in the technical process underlying GenAI model training has been filed in the United States. In the absence of legal norms befitting GenAI's emerging copyright challenges, courts are required to fill in the gaps left by positive law. In doing so, they must resort to the legislative task of examining the social adequacy of the consequences of their rulings. This largely involves considerations beyond the legal realm. As their decisions impact society's expectations of the technologies in question, judges are currently burdened with even greater responsibility beyond the usual scope of their role within the legal system. Observing this apparent shift in the importance of the courts, one must return to a bigger question: what is the law's function within society? According to systems theory, the legal system stabilizes and generalizes normative expectations.<sup>4</sup> Can this still be said of copyright law, an area hugely affected by accelerating change, currently unsettling society by its incapability to manage or regulate innovation efficiently?

After briefly contextualizing and outlining GenAI in the following section, chapter 2 of this paper aims to elucidate the doctrinal mine field surrounding GenAI by

---

<sup>1</sup> John O. McGinnis, 'Laws for Learning in an Age of Acceleration' (2011), *Wm. & Mary L. Rev.* 53, pp. 305-350, at 310; See also Lyria Bennett Moses, 'Recurring Dilemmas: The Law's Race to Keep Up With Technological Change' (2007) UNSW Law Research Paper, 21.

<sup>2</sup> On the concepts of the "information age" and the "network society" see Manuel Castells, *The Network Society: From Knowledge to Policy*, in Manuel Castells and Gustavo Cardoso (eds), *The Network Society: From Knowledge to Policy*, Washington DC: Johns Hopkins Center for Transatlantic Relations, 2005, pp. 3-21, at 3-5; for further reading: Manuel Castells, *The Rise of the Network Society, The Information Age: Economy, Society and Culture Vol. I.*, Cambridge MA: Wiley-Blackwell, 2010.

<sup>3</sup> See Simon Abis and Laura Veldkamp, 'The Changing Economics of Knowledge Production' (2024) *The Review of Financial Studies*, 37(1), pp. 89-118.

<sup>4</sup> Niklas Luhmann, *Das Recht der Gesellschaft*, Frankfurt am Main: Suhrkamp, 1993, at 131-2.

studying current case law regarding the training of GenAI models. In chapter 3, the search for analogous techno-legal constellations around the globe will lead us to the German Federal Court of Justice's treatment of search engines. Moreover, a look at the development of copyright law by the end of the 20<sup>th</sup> century, thereby revisiting how the law and courts in particular handled novel technologies in the past, may help us contextualize the current technological change impacting copyright law. What follows in chapter 4 is a methodological change of perspective: the courts' handling of disruptive innovation will be observed and described externally from a legal-sociological point of view, utilizing systems theory as a framework. Finally, an outlook shall pave the way to re-import socio-legal insights from the descriptive realm of the *is* to the normative realm of the *ought*.

## 1.2 WHAT IS GENAI AND HOW DOES IT AFFECT COPYRIGHT LAW?

As the year 2022 drew to a close, the US software company *OpenAI* unleashed *ChatGPT* onto the public. With it, GenAI burst onto the scene, with its wide array of handy features readily available to users online free of charge. Though applications using GenAI had been available long before the release of *ChatGPT*,<sup>5</sup> the 'AI boom' at the end of 2022 cemented the technology's potential into the collective awareness of society.<sup>6</sup> In what seemed like a matter of days, GenAI was on everyone's lips.

Counterintuitive to its omnipresence in the media, GenAI is perceived as somewhat enigmatic in public discourse, its workings shrouded in an air of mystery.<sup>7</sup> The vast and multi-layered, interdisciplinary issues surrounding AI are difficult to grasp in their entirety, especially for legal professionals lacking the technical proficiency behind the technology. However, it would be a grave mistake for legal scholars to be put off by GenAI's perceived opacity, given that the legal system must comprehend the technological processes surrounding the new technology in order to react and adjudicate its impact in legal terms. With this in mind, the basic framework needed for a rudimentary understanding of GenAI shall be outlined below.

*Artificial intelligence* refers to the general ability of computers to mimic or surpass human intelligence by performing complex, automated tasks without human intervention.<sup>8</sup> A common route to AI is the implementation of *machine learning*. This subset of AI uses mathematical algorithms to recognize and thus learn patterns from large amounts of raw data and use them as a basis for making decisions, predicting outcomes and organizing large amounts of information.<sup>9</sup> *Deep learning* is an advanced branch of machine learning that uses so-called neural networks to model complex data representations and automatically recognize correlations and patterns in large data sets.<sup>10</sup> Deep learning techniques form the basis of *Generative AI*. GenAI goes beyond

---

<sup>5</sup> See Stuart J. Russel and Peter Norvig, *Artificial Intelligence: A Modern Approach*, Hoboken: Prentice Hall, 2021, at 17.

<sup>6</sup> See, for example, James Vincent, 'ChatGPT proves AI is finally mainstream - and things are only going to get weirder', *The Verge* (December 8, 2022), <https://www.theverge.com/2022/12/8/23499728/ai-capability-accessibility-chatgpt-stable-diffusion-commercialization>.

<sup>7</sup> See, for example, Jaron Lanier, 'There is no A.I.', *The New Yorker* (April 20, 2023), <https://www.newyorker.com/science/annals-of-artificial-intelligence/there-is-no-ai>.

<sup>8</sup> See Karen Hao, 'What is AI? We drew you a flowchart to work it out', *MIT Technology Review* (November 10, 2018), <https://www.technologyreview.com/2018/11/10/139137/is-this-ai-we-drew-you-a-flowchart-to-work-it-out>; For a differentiated discussion of the contingency of definitions of AI, Russel and Norvig, *supra* note 5, at 1-5.

<sup>9</sup> Ian Goodfellow et al., *Deep Learning*, Cambridge MA: MIT Press, 2016, at 2-3.

<sup>10</sup> Leonardo Banh and Gero Strobel 'Generative artificial intelligence' (2023) *Electronic Markets*, 33(63), at 3.

predicting: completely new, original data is generated on the basis of existing data sets. GenAI imitates learned data patterns to generate new ones.<sup>11</sup> Language generators such as chatbots (including the above mentioned *ChatGPT*) and image generators are examples of applications using generative foundations.<sup>12</sup>

General purpose GenAI applications are essentially based on two pillars: sophisticated algorithmic models on the one hand and vast amounts of data on the other. The first pillar requires developers to conceptualize mathematical foundations, so-called models. Models are capable of generating desired results, output, by processing specific input data. Different applications require different models: *language models* are implemented to learn statistical patterns in texts and to generate language on the basis of prompts, while *diffusion models* are generally used to remove image noise and generate new images. Models contain *parameters* representing the variety of methods a model has at its disposal to handle data.<sup>13</sup> Once the basic model has been prepared, *AI training* can begin: this mainly consists of feeding the model data and adjusting the parameters in the process depending on the output. The output is analyzed step by step in order to gradually approach the desired results. In this process, the model is adjusted iteratively with new input data.<sup>14</sup> The second pillar represents vast amounts of ideally high-quality data. Quality here refers to the accuracy, integrality, and consistency of the data. If the model represents a car, the data represents its fuel, whereby a high-performance automobile requires adequate fuel. Thus, sourcing and compiling the right datasets for training purposes is paramount to any GenAI endeavor. In particular, programs offering comprehensive general services, heavily rely on a combination of data quality and quantity to train their models.<sup>15</sup>

Fortunately for developers, a vast trove of data lies at their fingertips – the world wide web. Moreover, the data is easily accessible and can be extracted with the help of web crawlers. Crawlers are implemented to scour the web with the purpose of indexing and copying relevant data in a process called scraping.<sup>16</sup> Non-profit organizations such as Common Crawl and the Large-scale Artificial Intelligence Open Network (LAION) make petabytes of crawled data sets readily available to the public free of cost.<sup>17</sup> Their data has therefore served as the reliable bedrock to a host of GenAI models.

At this point however, the seemingly straightforward technical process becomes somewhat murky from a legal perspective: according to the US Copyright Act, “original works of authorship fixed in any tangible medium of expression” are protected by copyright law.<sup>18</sup> Similarly, Swiss law sees any literary and artistic intellectual creation with individual character created by a natural person, irrespective

---

<sup>11</sup> Ibid., at 3-6.

<sup>12</sup> Faisal Kalota, ‘A Primer on Generative Artificial Intelligence’ (2024) *Education Sciences*, 14(172), at 7.

<sup>13</sup> Banh and Strobel, *supra* note 10, at 4.

<sup>14</sup> Adam Zewe, ‘Explained: Generative AI’, MIT News (November 9, 2023), <https://news.mit.edu/2023/explained-generative-ai-1109>.

<sup>15</sup> Christian Peukert et al, ‘Strategic Behavior and AI Training Data’ (2024) CESifo Working Paper No. 11099, at 3.

<sup>16</sup> David Pierce, ‘The text file that runs the internet’, *The Verge* (February 14, 2024), <https://www.theverge.com/24067997/robots-txt-ai-text-file-web-crawlers-spiders>.

<sup>17</sup> See Christoph Schuhmann et al, *LAION-5B: An open large-scale dataset for training next generation image-text models*, Munich: NeurIPS, 2022; see also Stefan Baack, ‘A Critical Analysis of the Largest Source for Generative AI Training Data: Common Crawl’ (2024) *FACCT '24: Proceedings of the 2024 ACM Conference on Fairness, Accountability, and Transparency*, pp. 2199-2208.

<sup>18</sup> 17 United States Code § 102.

of the creation's value or purpose, as a protected work.<sup>19</sup> Therefore, there is a distinct possibility that one person's training data collected online may in fact be another person's work protected under copyright law.<sup>20</sup> Thus, on the premise that GenAI training is to be considered a relevant action under copyright law because protected works are *copied* without existing licensing agreements or legal exceptions, fundamental questions regarding the future of GenAI and its reconcilability with copyright law come to the fore. The case outlined in the following chapter epitomizes the tensions between GenAI development and copyright law.

## 2. ANATOMY OF A LEGAL UNCERTAINTY: ANDERSEN V. STABILITY AI

### 2.1 WHAT MAKES THIS CASE NOTEWORTHY

The controversy surrounding the copyright qualification of GenAI training unraveled with a wave of high-profile lawsuits, one of the first being *Andersen v. Stability AI* in January 2023 between a group of artists and US software company Stability AI.

Strictly doctrinal questions surrounding copyright law and how the concrete case should or could play out are not of immediate importance to this piece of research. Rather, the objective is to observe how the law and society gradually grapple with disruptive innovation and potential regulatory pitfalls. Therefore, an emphasis is put on the initial statements in the court proceeding as well as the reactions of formally uninvolved stakeholders from within society, asking what type of early societal expectations regarding the training of GenAI models may be observed.

Regarding the pertinence of *Andersen v. Stability AI* for international copyright discourse, it must be acknowledged that US case law will inevitably impact global legal practice. The majority of companies that develop GenAI applications have their operational headquarters in the United States and train their models there (including Stability AI). Additionally, these companies generally try to avoid foreign courts and therefore often include corresponding clauses in their contracts and terms and conditions choosing American jurisdiction where possible. US court rulings and legal practice surrounding GenAI may not be binding beyond US jurisdiction, but they are decisive for the development and use of its applications. Setting aside the fact that common law's fair use doctrine more often than not results in very similar rulings to the civil law (*droit d'auteur*) system of specified and exhaustive statutory exceptions,<sup>21</sup> the handling of disruptive innovation is not just a technical, legal question germane to a single nation-state, but an economic, political and therefore societal discussion of global magnitude.<sup>22</sup> Landmark US case law such as *Andersen v. Stability AI* will therefore not go unnoticed to the rest of the world.

---

<sup>19</sup> Article 2 and 6 CopA.

<sup>20</sup> Mark A. Lemley and Bryan Casey, 'Fair Learning' (2020) *Texas Law Review*, 99(4), pp. 743-785, at 745-754.

<sup>21</sup> Florent Thouvenin and Peter Georg Picht, 'AI & IP: Recommendations for legislation, application of law and research on the challenges at the interfaces of artificial intelligence (AI) and intellectual property (IP)' (2023) *sic!*, 10, pp. 507-524, at 519.

<sup>22</sup> Sandra Marmy-Brändli and Isabelle Oehri, 'Das Training künstlicher Intelligenz' (2023) *sic!*, 12, pp. 655-666, at 665.

## 2.2 THE DISPUTE AND THE COMPETING ARGUMENTS

The plaintiffs, a group of visual artists, filed a complaint on January 13, 2023 in the United States District Court, Northern District of California alleging that Stability AI, DeviantArt and Midjourney, providers of GenAI image generators, had committed copyright infringement in various forms during the development of their programs.<sup>23</sup> While the class action is broad in scope, one allegation stands out: Stability AI allegedly used the aforementioned LAION dataset to reproduce five billion images from the Internet, including copyrighted artistic works of the plaintiffs, to train its diffusion model, *Stable Diffusion*. This allegation, Count I of the complaint, is of particular interest because it is the only claim that was granted by the presiding judge without leave to amend in an initial order dated October 30, 2023. The court thus signaled that it recognized the necessity for clarification on the matter of GenAI training, paving the way for landmark precedent.<sup>24</sup> This notwithstanding, recognizing an issue does not immediately eliminate legal uncertainty. Rather, it confirms that GenAI's training practices must withstand the test of fair use, which is notoriously unpredictable. It has ironically been termed the "right to hire a lawyer" by Lawrence Lessig,<sup>25</sup> constituting a point of contention within copyright law for decades.<sup>26</sup>

The fair use doctrine is shaped by four factors: 1) the transformative purpose and character of the use in question; 2) the nature of the copyrighted work; 3) the amount and substantiality used in relation to the copyrighted work and 4) the potential market effects the copyrighted work may incur.<sup>27</sup> Judges must use the four criteria on a case-by-case basis when evaluating alleged infringement. It is not a blanket defense, but a highly nuanced balance closely tied to a case's specific facts.

The first factor, *transformative use*, plays a particularly important role in the context of innovation and has thus been stretched the most by interpretative inconsistencies of judges over the years.<sup>28</sup> This ambiguity is also reflected in the parties' submissions in *Andersen v. Stability AI*: the artists argue that the development of *Stable Diffusion* requires, among other things, whole copies of works, as Stability AI has to fix them as local copies in order to train its model.<sup>29</sup> The plaintiffs maintain that this corresponds to the use of the artworks in their entirety without consent or licensing, a practice hardly representing transformative use.<sup>30</sup>

Opposing the artists, Stability AI argues that their training process cannot be equated with copying entire works, nor do they store whole works in compressed form. Instead, by using URLs, metadata, from billions of images, the model is merely taught algorithmic structures to create new works. A copy of the old work would in fact not be expedient, as the purpose of *Stable Diffusion* (and GenAI in general) is precisely the

<sup>23</sup> *Andersen v. Stability AI Ltd*, 3:23-cv-00201, (N.D. Cal. Jan 13, 2023) ECF No. 1.

<sup>24</sup> *Andersen v. Stability AI Ltd*, 3:23-cv-00201, (N.D. Cal. Oct 30, 2023) ECF No. 117, 7th Cir.

<sup>25</sup> Lawrence Lessig, *Free Culture: The Nature and Future of Creativity*, New York: Penguin, 2004, at 187.

<sup>26</sup> Neil Weinstock Netanel, *Copyright's Paradox*, New York: Oxford University Press, 2009, at 66; See David Nimmer, "'Fairest of Them All" and Other Fairy Tales of Fair Use' (2003) *Law & Contemporary Problems*, 66, pp. 263-287; For empirical data, see Barton Beebe, 'An Empirical Study of U.S. Copyright Fair Use Opinions Updated, 1978-2019' (2020) *Journal of Intellectual Property and Entertainment*, 10(1), pp. 1-37.

<sup>27</sup> 17 United States Code § 107; see further Benjamin L.W. Sobel, 'Artificial Intelligence's Fair Use Crisis (2017) *Colum. J.L. & Arts*, 41, pp. 45-97, at 49-57.

<sup>28</sup> Jiarui Liu, 'An Empirical Study of Transformative Use in Copyright Law' (2019) *Stanford Technology Law Review*, 22(1), pp. 163-241, at 240.

<sup>29</sup> *Andersen v. Stability AI Ltd*, 3:23-cv-00201, (N.D. Cal. Nov 29, 2023) ECF No. 129, at 13-4, using conversion software such as *img2dataset*.

<sup>30</sup> *Ibid.*, at 2.

transformation and creation of new images that are hardly related to the original works. It is also this characteristic that makes the training process highly transformative under fair use, as something entirely new is created.<sup>31</sup> At the time of writing, we are yet to see which narrative is deemed more plausible by courts, while GenAI applications continue to rubber stamp their presence in society.

### 2.3 THE ACADEMIC AND PUBLIC DISCOURSE TO DATE

The copyright classification of GenAI training and the case of *Andersen v. Stability AI* is dividing legal experts: one school of thought sees analogies to past disputes regarding innovation, where only metadata or small fragments of protected works were used transformatively for new purposes detached from the expressive content of the original work and with huge benefits for a wider public (*transformative, non-expressive use*).<sup>32</sup> For example, in *Authors Guild v. Google*, the court held that Google Books' practice of posting entire passages of books online for the purpose of showcasing them was transformative enough to be deemed fair use. Google Books makes an important contribution to public knowledge which in itself is transformative, as transformativity is not a literal criterion, but merely symbolizes "complex thought", according to the judge.<sup>33</sup> The public, as the "primary intended beneficiary" of copyright,<sup>34</sup> was thus prioritized in *Authors Guild v. Google*, while the rights holders', i.e. the authors' claims were dismissed. Some experts argue that the same form of holistic logic should be applied to the context of GenAI, where, similarly to Google Books, the public reaps great benefits from the applications.

In an opposing analysis, other scholars regard the classification of the technical process behind GenAI training as crucial to its legal assessment. A protected work must only be fixed in a tangible medium for a period of more than a transitory duration in order to be deemed a *copy* according to the US copyright Act.<sup>35</sup> Accordingly, courts have deemed even volatile electronic computer memory to be sufficiently tangible,<sup>36</sup> especially when fixed long enough to hold a sovereign economic value due to its role in the technical process.<sup>37</sup> Applied to copy-reliant technical processes such as the training of GenAI models, even fleeting fixation in datasets for the purpose of extracting metadata would be regarded as infringing reproductions of *entire works*. These two contrasting schools of thought based on somewhat contradictory precedent

<sup>31</sup> *Andersen v. Stability AI Ltd*, 3:23-cv-00201, (N.D. Cal. Apr 18, 2023) ECF No. 58, 1-3.

<sup>32</sup> Matthew Sag, 'Copyright and Copy-Reliant Technology' (2009) *Northwestern University Law Review*, 103, pp. 1-68, at 36-42; *Authors Guild v. Google, Inc*, 804 F.3d 202 (2d Cir. 2015); *Authors Guild v. HathiTrust*, 755 F.3d 87 (2d Cir. 2014).

<sup>33</sup> *Authors Guild v. Google, Inc*, 804 F.3d 202 (2d Cir. 2015), 17th Cir.

<sup>34</sup> *Authors Guild v. Google, Inc*, 804 F.3d 202 (2d Cir. 2015), 13th Cir.

<sup>35</sup> See H.R. REP. NO. 94-1476, at 53 (1976): A copy must be "fixed in a tangible medium of expression" while "sufficiently permanent or stable [...] for a period of more than transitory duration."

<sup>36</sup> So called *RAM doctrine* from *MAI Systems Corp. v. Peak Computer, Inc.*, 991 F.2d 511 (9th Cir. 1993) and *Cartoon Network LP v. CSC Holdings, Inc.*, 536 F.3d 121, (2d Cir. 2008); See Steven Foley, 'Buffering and the Reproduction Right: When is a Copy a Copy?' (2010) *Cybaris*, 1(4), pp. 100-122; on the distinction between human and machine copyright infringement: James Grimmelman, *Copyright for Literate Robots*, *Iowa Law Review*, 101 2016, 658 et seq.

<sup>37</sup> DMCA Section 104 Report, August 2001, available at <https://www.copyright.gov/reports/studies/dmca/sec-104-report-vol-1.pdf>, at 112.

and doctrinal reasoning, lead to a stalemate among experts, cementing legal uncertainty with no resolution in sight in the near future.<sup>38</sup>

Looking beyond common law towards the copyright orders of civil law (*droit d'auteur*) regimes characterized by specified statutory copyright exceptions, it becomes apparent that the legal conundrum surrounding GenAI and copying is not merely a US phenomenon. Taking the example of Switzerland's copyright discourse, legal scholars even make explicit reference to *Andersen v. Stability AI* when engaging in the assessment of model training.<sup>39</sup> Some Swiss copyright scholars question whether the discussed technical reproductions for training purposes are relevant at all under the Swiss Copyright Act (CopA), as the necessary enjoyment of the actual work (*Werkgenuss*) does not occur when images are only used for metadata,<sup>40</sup> without being stored permanently.<sup>41</sup> However, this reasoning seems to be flawed when examining the legislator's logic in the past: by introducing Article 24a CopA, the legislator considered it necessary to explicitly permit ephemeral digital reproductions within a technical process such as caching because it would have had to be considered a copy under the law, contradicting the above stance. To argue that no specific exemptive legal norm were needed for the case of training GenAI models would therefore be inconsistent. Furthermore, since the copyright exception in Article 24a CopA only covers truly transient copies without independent economic significance, the Article's use case is too narrow for the process of GenAI training.<sup>42</sup> Summarizing the above, it may be said that while the fair use exception of the US Copyright Act is characterized by ambiguity, the specified exceptions of the CopA are too rigid to accommodate GenAI training. According to both copyright regimes, clear doctrinal justifications for the development of the mainstream programs of GenAI are not available, leading to legal uncertainty irrespective of common or civil law outlook.<sup>43</sup>

From a more high-level perspective, it already seems unlikely that an established technology widely used by the general public would be outlawed on a legal copyright technicality. There has therefore always been a strong willingness to stretch existing legal norms in such a way that novelty can be subsumed under them, in some cases contrary to the original reasoning of the legislator and towards an explicitly goal-oriented purpose, i.e. paving the way for specific innovation.<sup>44</sup> How US or Swiss courts decide the first copyright disputes in the area of GenAI training will therefore not only depend on the law but will also be shaped by the reality of society's embrace of a technology and its proliferation. Thus, judges must not only interpret existing law in such cases but broadly examine the *social adequacy* of the consequences of their rulings as they reach beyond existing legal norms if the supposed best outcome necessitates it.<sup>45</sup>

<sup>38</sup> Pamela Samuelson, 'Thinking About Possible Remedies in the Generative AI Copyright Cases' (2024) Communications of the ACM 2024, at 1.

<sup>39</sup> Marmy-Brändli and Oehri, *supra* note 22, at 659, note 37 there.

<sup>40</sup> Ivan Cherpillod, 'Intelligence artificielle et droit d'auteur' (2023) *sic!*, 9, pp. 445-452, at 446.

<sup>41</sup> Thouvenin and Picht, *supra* note 21, at 506.

<sup>42</sup> Marmy-Brändli and Oehri, *supra* note 22, at 658 (especially note 32 there) and 661-2.

<sup>43</sup> *Ibid.*, at 664-5.

<sup>44</sup> See e.g. Thouvenin and Picht, *supra* note 21, at 515-523, where the authors admit that the proposal to extend the research exception of Art. 24d CopA represents a very broad interpretation.

<sup>45</sup> See, for example, Pamela Samuelson at the Harvard Law School Rappaport Forum, summarized in: Milano Brett, 'What is fair use in the age of AI?', Harvard Law Today (November 2, 2023), <https://hls.harvard.edu/today/intellectual-property-experts-discuss-fair-use-in-the-age-of-ai>; see also, WIPO refraining from making a recommendation on how to deal with GenAI in view of the ongoing proceedings:

In the shadow of the law's indecision, opinions from the worlds of business and politics are gaining traction. During the ongoing legal proceedings surrounding GenAI training, proponents of tech companies met with US Representatives behind closed doors. The group discussed the development of GenAI in search of mutual solutions regarding the regulation of GenAI under copyright law.<sup>46</sup> Simultaneously, tech investors have launched formal notices to the US Copyright Office, arguing that the societal benefits of GenAI applications, the billions of dollars invested to date and the ongoing geopolitical race for AI supremacy, should factually rule out negative litigation outcomes and extensive regulation for GenAI development.<sup>47</sup> On the other side of the debate, interest groups from the creative industry are lobbying for the strict regulation of GenAI, lamenting the future and integrity of their jobs and output.<sup>48</sup> Further, the largest AI companies are entering into licensing agreements with media and publishing houses, securing copious amounts of clean data and avoiding further lawsuits,<sup>49</sup> an expensive privilege that is only available to few market behemoths, excluding smaller companies such as Stability AI and independent artists.<sup>50</sup> While the law is struggling to classify innovation's challenges to copyright law, other parts of society continue to move forward. AI companies have been accelerating the development of their GenAI applications since 2023, flooding the market with new products. GenAI is making itself indispensable to society.<sup>51</sup>

Though they are lacking normative material to base their rulings on, pressure is mounting on courts to act in the disputes that have been brought forward such as *Andersen v. Stability AI*. Judges will be forced to weigh up the interests of society as a whole in order to strive for socially adequate rulings, reaching far beyond the letter of the law. Looking back at past copyright case law in connection to disruptive technological innovation, it becomes apparent that the tendency of judges to weigh up the social adequacy of the consequences of their decisions over existing norms and preceding case law, is not a totally new phenomenon. Therefore, looking to similar copyright rulings from the past may inform us on how the legal system has reacted to previous disruptive technological change.

---

WIPO Factsheet, Generative AI: Navigating Intellectual Property, [https://www.wipo.int/export/sites/www/about-ip/en/frontier\\_technologies/pdf/generative-ai-factsheet](https://www.wipo.int/export/sites/www/about-ip/en/frontier_technologies/pdf/generative-ai-factsheet).

<sup>46</sup> Cecilia Kang, 'In Show of Force, Silicon Valley Titans Pledge 'Getting This Right' With A.I.', *New York Times* (September 13, 2023), <https://www.nytimes.com/2023/09/13/technology/silicon-valley-ai-washington-schumer.html>.

<sup>47</sup> See U.S. Copyright Office Notice of Inquiry on Artificial Intelligence & Copyright (Dkt. 2023-6) Comments of Meta Platforms, Inc.; and U.S. Copyright Office Notice of Inquiry on Artificial Intelligence & Copyright (Dkt. 2023-6) Comments of a16z (Andreessen Horowitz).

<sup>48</sup> For example, Statement of the SSA (Swiss Society of Authors), 'Künstliche Intelligenz und Urheberrecht, was sind die Herausforderungen?' (December 7, 2023), <https://ssa.ch/de/kuenstliche-intelligenz-und-urheberrecht-was-sind-die-herausforderungen>; *The New York Times Company v. Microsoft Corporation*, 1:23-cv-11195 (S.D.N.Y.), at 1-3.

<sup>49</sup> Elizabeth Lopatto, 'OpenAI searches for an answer to its copyright problems', *The Verge* (August 30, 2024), <https://www.theverge.com/2024/8/30/24230975/openai-publisher-deals-web-search>.

<sup>50</sup> Adi Robertson, 'Artists' lawsuit against Stability AI and Midjourney gets more punch', *The Verge* (August 13, 2024), <https://www.theverge.com/2024/8/13/24219520/stability-midjourney-artist-lawsuit-copyright-trademark-claims-approved>.

<sup>51</sup> For an overview, see Liu Yan and Wang He, 'Who on Earth is Using Generative AI?' (2024) Policy Research Working Paper 10870, World Bank Group.

### 3. COURTS ASSESSING SOCIAL ADEQUACY AND IMPACT INSTEAD OF WRITTEN LAW: THE BGH IN THUMBNAILS

#### 3.1 THE BGH'S SEARCH ENGINE PRIVILEGE

The question surrounding judges' capacity to create law is a foundational question of legal theory much discussed in a number of contexts.<sup>52</sup> By revisiting a trilogy of rulings known as *Thumbnails I–III* by the German Federal Court of Justice (BGH), we can observe clearly how a European high court has dealt with the copyright ramifications of innovation in the absence of guiding legal norms. In the three cases, the question brought to the BGH was whether search engines should be allowed to display copyright-protected works as preview images (*thumbnails*) in their image search tools, leading to the so-called *search engine privilege* in copyright law.

In the first ruling of April 29, 2010, an artist claimed that Google had displayed images of her works as thumbnails in the search engine's image search without her explicit consent.<sup>53</sup> In the absence of befitting copyright exceptions under the German Copyright Act (UrhG), the BGH was forced to manufacture a creative solution,<sup>54</sup> holding that the plaintiff must be assumed to have given her "implied consent":<sup>55</sup> where content is made freely accessible on the web and no restrictions against being found by search engine-crawlers are in place, rights holders must expect the common online practice of crawling.<sup>56</sup> While this solution has supposed and prioritized the general public's desire for the continued (legal) existence of image search engines on the Internet,<sup>57</sup> the concept of implied consent was in fact alien to the UrhG up to that point and had been fabricated by the judges for the case of search engines.

In the second ruling of October 19, 2011, the BGH cemented *implied consent* as a copyright argument by going one step further: where the rights holder protects its content from crawlers but grants a specific third party the right to post images of their work, the original rights holder is assumed to consent to the use of the images by search engines despite the fact that they were taken off the third party's unprotected website. The fact that the rights holder had protected its original content from search engines on its *own* website was considered insignificant by the judges.<sup>58</sup> Only in cases where content is taken from websites *without* the (implied) consent of the original rights holder – for example where access is restricted through a password and therefore open third party-use has unequivocally not been consented to – a copyright infringement must be assumed.<sup>59</sup>

However, the BGH only held this position for a few years, for on September 21, 2017, in a third verdict, the BGH confirmed the trend towards a total search engine privilege in copyright law. In *Thumbnails III*, the operator of an erotic website claimed that the content of their webpage, only available to customers for a fee and by entering

<sup>52</sup> See, for example, Craig Green, *An Intellectual History of Judicial Activism* (2009), *Emory Law Journal*, 58(5), pp. 1195-1260; HLA Hart, *The Concept of Law*, 3<sup>rd</sup> edn, Oxford UK: Oxford University Press, 2012, at 96-9; Scott J. Shapiro, *Legality*, Cambridge MA / London: The Belknap Press, 2011, at 371-7.

<sup>53</sup> BGH I ZR 69/08, April 29, 2010 (*Thumbnails I*).

<sup>54</sup> *Ibid.*, at 10.

<sup>55</sup> *Ibid.*, at 15, "*schlichte Einwilligung*" translated by the author.

<sup>56</sup> *Ibid.*, at 18.

<sup>57</sup> *Ibid.*, at 21.

<sup>58</sup> BGH I ZR 140/10, October 19, 2011 (*Thumbnails II*), at 12.

<sup>59</sup> *Ibid.*, at 14.

a password, was on display on the image search tool of a search engine. According to precedent in *Thumbnails I* and *II*, implied consent could not be assumed if measures were taken to protect the content from crawlers. In the case of a password-protected website, the placement of sufficient protective measures could generally be assumed.

Nonetheless, the BGH stated that, despite the precautions taken and the consequent lack of implied consent, the search engine provider could not reasonably be expected to completely prevent the automated technical process of crawling. The total detection of copyright-infringing contents as part of a general monitoring obligation could not be assumed.<sup>60</sup> Rather, it is up to rights holders to monitor their works and make sure that they do not leak. The court explicitly argued that search engines must be excused due to the fact that they ensure the functionality of the internet in the “*interest of the information society*”.<sup>61</sup> Without working search engines, a meaningful use of the immense wealth of information on the Internet would be near impossible.<sup>62</sup> In other words, search engines had become indispensable to Internet users and had to be protected, i.e. deemed legal at all costs.

### 3.2 A CRITICAL ASSESSMENT OF THE BGH’S RULINGS

Copyright’s statutory exceptions are largely exhaustive in civil law countries such as Germany and Switzerland.<sup>63</sup> In the latter, the principle of technological neutrality of legal norms grants slightly more doctrinal leeway regarding the interpretation of individual cases resulting out of technological innovation. Nevertheless, the necessity of introducing the aforementioned Article 24a CopA to cover temporary reproductions as parts of a technical process, shows the limits of judicial creativity concerning copyright exceptions.<sup>64</sup> Criticism of the BGH’s judgments is therefore not surprising, as the legislator’s *ex ante* limitation of copyright exceptions does not, in principle, permit judges to devise new copyright exceptions *ex post*. *Thumbnails I-III* demonstrate how the reality of the network society can press courts to create law in a form of legal activism in situations where positive law precludes it. The societal expectation that Internet search engines should function smoothly without legal hiccups, contradicted the German Copyright Act, the UrhG. The unsatisfactory legal gap pressed the court to find a socially adequate solution *ex post* in an effort to placate societal expectations regarding search engines as an essential tool on the Internet.

Technological developments outpacing regulatory efforts expose a paradox besetting copyright regimes built on statutory exceptions: where, in the pursuit of legal certainty, copyright exceptions are defined narrowly, courts tend to take matters into their own hands and become creative when positive law seems insufficient. This leads to untransparent decisions based on a wide array of judges’ opinions, causing more legal uncertainty instead of legal clarity.

---

<sup>60</sup> BGH I ZR 11/16, September 21, 2017, (*Thumbnails III*), at 26-31.

<sup>61</sup> BGH I ZR 11/16, September 21, 2017, (*Thumbnails III*), at 24, “*im Interesse der Informationsgesellschaft*” translated by the author.

<sup>62</sup> BGH I ZR 11/16, September 21, 2017, (*Thumbnails III*), at 24.

<sup>63</sup> Sandra Marmy-Brändli, *Die Flexibilität urheberrechtlicher Schrankensysteme*, Bern: Stämpfli, 2017, at 329-330.

<sup>64</sup> *Ibid.*, 333-4.

### 3.3 COPYRIGHT LAW AS A BALANCING ACT

If we observe copyright law's relationship to new technology holistically, it becomes clear that its development is closely tied to regular challenges by innovation. By its very nature, copyright is the product of a field of tension, balancing various social and economic interests resulting from creativity and innovation in the context of new media and technologies.<sup>65</sup> It is the product of the economic, political and cultural evolution of society and must therefore regularly renegotiate the positions of its market participants who create and exploit copyrighted works.<sup>66</sup> As a consequence, drastic technological change that influences these positions invariably leads to drastic changes to the law. Historically, when the rate of innovation had been limited, legislators have succeeded in meeting this demand, managing to adapt legal norms to the new technological affordances. For example, in response to the arrival of private tape recorders, the Federal Republic of Germany had to introduce the *private copying levy* after the BGH did not consider any existing copyright exceptions to be applicable when adjudicating the permissibility of private recordings in 1955.<sup>67</sup> The levy had been enacted in 1965 after ten years of consultations between representatives from law, politics and business, demonstrating an unhurried approach alien to the 21<sup>st</sup> century.<sup>68</sup>

Almost concurrently, the *Xerox* photocopier found wide popularity during the 1960s. The photocopier suddenly gave US consumers the possibility to reproduce copyright protected works independently and with little effort. As with the private copying levy in West Germany, lawmakers had to take the potential consequences of regulation into account, especially as *Xerox* copying had already reached society's mainstream. This ultimately led to the codification of fair use in the Copyright Act of 1976. While the West German private copying levy prescribed an *ex ante* safeguard through a statutory tariff, fair use represented an *ex post* measure, as the US Copyright Act delegated the assessment of new technologies to the courts within the confines of the doctrine. The US legislative seemingly recognized the potential of the digital revolution and the corresponding need for nimble copyright provisions, enforced most effectively by involving judges on a case-by-case basis.<sup>69</sup>

As US lawmakers had predicted, the rate of digital innovation accelerated exponentially with the dawn of the information age.<sup>70</sup> In addition to acknowledging the new technical means of reproduction, leading US legal scholars like Benjamin Kaplan recognized the Internet as the catalyst of a paradigm shift early on in which access to and distribution of copyright protected works seemed limitless.<sup>71</sup> According to this school of thought, innovation, one of the historical objectives of copyright protection, as well as the competitive market environment that drives it, would suffer greatly from restrictive copyright measures in the digital ecosystem. Without some

<sup>65</sup> Willi Egloff, *Geschichten vom Urheberrecht*, Bern: Stämpfli, 2017, at 2; Monika Dommann, *Authors and Apparatus*, Ithaca: Cornell University Press, 2019, at 7.

<sup>66</sup> Artur-Axel Wandtke, *Das Urheberrecht*, Berlin: De Gruyter, 2016, at 1-2.

<sup>67</sup> BGH I ZR 8/54, May 18, 1955.

<sup>68</sup> Egloff, *supra* note 65, at 87-8.

<sup>69</sup> For an overview, see Stephen Breyer, 'The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs' (1970) *Harvard Law Review*, 84, pp. 281-355.

<sup>70</sup> See Gordon E. Moore, 'Cramming more components onto integrated circuits' (1965) *Electronics Magazine*, 38(8), pp. 114-117, observation that the number of transistors on integrated circuits doubles every two years; see also Jonathan Koomey et al, 'Implications of Historical Trends in the Electrical Efficiency of Computing' (2011) *Annals of the History of Computing, IEEE*, 33(3), pp. 46-54, on the increase in computing capacity over time.

<sup>71</sup> Benjamin Kaplan, *An Unhurried View of Copyright*, New York: Columbia University Press, 1967, at 118-9.

freedom to copy, creators would not be able to benefit from the generativity made possible by the Internet.<sup>72</sup> The Internet facilitated and accelerated a copyright shift which saw individuals empowered to use copyrighted works privately from the comfort of their computers.<sup>73</sup> The digital *user* was born at last, surrounded by Internet platforms reshaping established market structures. Works were seen as *data*, holding new economic value in compiled masses – as seen in the context of the development of GenAI models.<sup>74</sup>

A legislative bureaucratically limited to reforms at intervals of several years cannot possibly succeed in regulating innovation adequately at the current rate of technological change. Based on *Amara's Law*, we tend to overestimate the impact of new technologies in the short term and underestimate it in the long term.<sup>75</sup> If prospective, consequence-oriented lawmaking is severely hampered by growing unpredictability due to accelerating technological change, the unexpectable, the examination of social adequacy which is usually part of the legislative process is thrust into the sphere of the generally retrospective, norm-oriented application of existing positive law. The formation of legal norms factually falls into the lap of the judiciary. The control of social development, which is a responsibility of lawmakers,<sup>76</sup> is carried out by judges instead.<sup>77</sup> This tendency can be observed in the cases *Thumbnails I-III*, as well as the development of the fair use doctrine, which has been relegated to a vague legal remedy characterized by uncertainty.<sup>78</sup> Furthermore, this tendency is becoming apparent in GenAI cases such as *Andersen v. Stability AI*, where judges seem to be finding law where lawmakers and scholars are failing to do so. What does this tendency mean for our understanding of the function of the legal system amid the accelerating technological change so distinctive to the 21<sup>st</sup> century?

## 4. A SYSTEMS THEORETICAL DESCRIPTION OF THE CURRENT STATE OF COPYRIGHT LAW

### 4.1 THE FUNCTIONAL DIFFERENTIATION OF SOCIAL SYSTEMS AS A RESPONSE TO SOCIETAL COMPLEXITY

In the last chapter, we saw how accelerating technological change tends to regularly disrupt established notions of copyright law. It is beyond doubt that the rapid advancements in artificial intelligence will not only affect nation state laws, but almost every area of 21<sup>st</sup> century society on a global scale. In order to understand the complex dynamics and disruptive effects of innovation in the information age, an adequate theoretical model is required capable of describing growing societal complexity. In this

---

<sup>72</sup> Breyer, *supra* note 69, at 348.

<sup>73</sup> Egloff, *supra* note 65, at 125.

<sup>74</sup> See, for example, João Pedro Quintais, Giovanni De Gregorio and João C Magalhães, 'How platforms govern users' copyright-protected content: Exploring the power of private ordering and its implications' (2023) *Computer Law & Security Review*, 48.

<sup>75</sup> Susan Ratcliffe, *Oxford essential quotations*, Oxford UK: Oxford University Press, 2018, <http://www.oxfordreference.com>.

<sup>76</sup> For Swiss legislative doctrine, see Georg Müller, Felix Uhlmann and Stefan Höfler, *Elemente einer Rechtssetzungslehre*, Zurich: Schulthess, 2024, at 18-20.

<sup>77</sup> *Ibid.*, at 24.

<sup>78</sup> Nimmer, *supra* note 26, at 281-286; Jenny Quang, 'Does Training AI Violate Copyright Law?' (2021) *Berkeley Technology Law Journal*, 36, pp. 1407-1435, at 1415-9; See *Authors Guild v. Google, Inc.*, 804 F.3d 202 (2d Cir. 2015).

chapter, the basic features of the systems theory model will be outlined before being utilized to observe the perceived judicial shift from norm orientation towards judges' assessments of social adequacy and the overall impact of their decisions.

In his theory of autopoietic social systems, Niklas Luhmann takes the complexity of society as his primary point of reference.<sup>79</sup> He describes modern society as a comprehensive social system characterized by the differentiation of distinct subsystems capable of taking growing, granular complexity into account. Subsystems differ according to their respective function within society: the subsystems of economy, politics, science, and law, for example, each fulfill different tasks within the functionally differentiated society and have therefore become independent of their environment. By that, a subsystem is operationally closed, regulating its borders by observing itself and its environment by its own functional logic.<sup>80</sup> The elements of a social system are communications and not actions of individuals.<sup>81</sup> In order for subsystems to effectively reduce complexity, they themselves must develop a high degree of internal complexity in order to compute communications that fall under the system's logic.<sup>82</sup> To this end, subsystems differentiate themselves further internally. A repetition of system formation takes place within the subsystems.<sup>83</sup> Through this process of continued granularity, space is created for the facilitation of further complexity.<sup>84</sup> Accordingly, the ability to continuously handle new complexity within the subsystem is crucial for the continued survival and autonomy of the subsystem.

The operational closure of autopoietic systems means that there can be no direct exchange between them. For example, the legal system cannot import information from the economic system directly, as the two systems do not operate by the same logic, i.e. code. They do not speak the same language. Thus, how do systems react to irritations, emanating from their environment?<sup>85</sup> The term *structural coupling* introduces and describes the connection between a system and its environment. Structural couplings enable and restrict influences from the environment on a subsystem.<sup>86</sup> They allow subsystems to link up without jeopardizing their reproductive autonomy, on the contrary: thanks to the indirect absorption of new information, structural couplings allow subsystems to increase their own complexity and secure internal reproduction.<sup>87</sup> When a new technology affects many subsystems at once as seen in the example of the proliferation of GenAI, subsystems necessarily must structurally couple. According to Dirk Baecker, the continued increase of digital media and technological innovation provide society with a surplus of information, i.e. communication, the processing of which is only possible with the help of structural interdependencies between subsystems.<sup>88</sup>

Having summarized the basic premises of system formation and communication within the modern, functionally differentiated society, we shall return to the law: how

<sup>79</sup> Georg Kneer and Armin Nassehi, *Niklas Luhmanns Theorie sozialer Systeme*, Munich: UTB, 1993, at 40; See also Niklas Luhmann, *Ausdifferenzierung des Rechts*, Frankfurt am Main: Suhrkamp, 1999, at 283.

<sup>80</sup> Luhmann, supra note 4, at 16.

<sup>81</sup> Christoph B. Graber, 'Personalisierung im Internet, Autonomie der Politik und Service Public' (2017) *sic!*, 5, pp. 257-270, at 263.

<sup>82</sup> Kneer and Nassehi, supra note 80, at 41-2.

<sup>83</sup> Niklas Luhmann, *Soziale Systeme*, Frankfurt am Main: Suhrkamp, 1987, at 37.

<sup>84</sup> Luhmann, supra note 79, at 292.

<sup>85</sup> Niklas Luhmann, *Einführung in die Systemtheorie*, Heidelberg: Carl-Auer, 2004, at 118.

<sup>86</sup> Luhmann, supra note 4, at 441.

<sup>87</sup> See Luhmann, supra note 85, at 132-3.

<sup>88</sup> See Dirk Baecker, *Wie verändert die Digitalisierung unser Denken und unseren Umgang mit der Welt?*, in Rainer Gläss and Bernd Leukert (eds.), *Handel 4.0.*, Heidelberg: Springer Gabler, 2017, at 4-8.

does the legal system fit into the systems theoretical description of society? What societal necessity has led to its differentiation, what function does the legal system provide? As social complexity increases, a temporal problem intensifies: Society requires predictability in order to operate efficiently towards the future.<sup>89</sup> The ongoing *Andersen v. Stability AI* case is characteristic of this. Stakeholders demand predictability in the form of legal certainty regarding the legal ramifications of GenAI training in order to plan ahead. The question the legal system must answer is therefore: what is to be *expected* in a future shaped by accelerating change and growing complexity?

Towards this goal, the legal system intends to guarantee certainty and alleviate the instability confronting society by stabilizing *normative expectations* via the regulation of their temporal, factual and social generalization. The law makes it possible to know which expectations are upheld and which are not. Expectations that flexibly adapt according to new circumstances, i.e. are not upheld in the case of disappointment, cannot guarantee predictability. They are not normative, but *cognitive expectations*, the result of an ongoing process of change. In contrast, normative expectations are characterized by the fact that they are sustained even in the event of disappointment, i.e. when expectations are not met.<sup>90</sup> A *norm* is nothing more than a counterfactually stabilized behavioral expectation.<sup>91</sup> *Legal norms* represent a structure of symbolically generalized, stabilized behavioral expectations.<sup>92</sup> Positive law is the evolutionary consequence of a growing body of legal norms, as statutory laws are created as a structural coupling between the subsystems of law and politics. Accordingly, laws symbolize the legal system and expected behavior.<sup>93</sup> Furthermore, the process of internal differentiation takes place: a decision-making apparatus is formed as a subsystem within the legal system, the courts, which interpret said laws and ultimately must decide. In this process, doctrines and the application of the law offer decision-making premises.<sup>94</sup> Within society's framework, the legal system with its courts is entrusted with the task of resolving conflicts between other subsystems by arbitrating according to its own legal logic.<sup>95</sup> Therefore, by ensuring its own autonomy, the legal system can continue to arbitrate efficiently within society, stabilizing normative expectations towards the pursuit of alleviating society's temporal problem at the heart of the legal system's very existence: the unpredictability of a future shaped by accelerating change and growing complexity.

#### 4.2 NORMATIVE EXPECTATIONS IN THE DYNAMIC REALITY OF THE INFORMATION AGE

Normative expectations can emerge from the midst of society, as so-called *social norms*, before they are stabilized and generalized as legal norms. For example, consumers regularly adapt their normative expectations around the affordances of new technologies, as each innovation, but even just a mere software update, may enable (or

---

<sup>89</sup> Luhmann, *supra* note 4, at 148.

<sup>90</sup> *Ibid.*, at 131-135.

<sup>91</sup> *Ibid.*, at 134.

<sup>92</sup> *Ibid.*, at 130.

<sup>93</sup> Niklas Luhmann, 'Normen in soziologischer Perspektive' (1969) *Soziale Welt*, 20(1), pp. 28-48, at 47.

<sup>94</sup> Niklas Luhmann, *Rechtssystem und Rechtsdogmatik*, Stuttgart: Kohlhammer, 1974, at 44.

<sup>95</sup> Marc Amstutz, *Das Gesetz*, in Peter Gauch und Pascal Pichonnaz (eds), *Figures juridiques / Rechtsfiguren*, Zürich: Schulthess, 2003, at 160-1; Luhmann, *supra* note 4, at 157.

disable) different capabilities.<sup>96</sup> Where social norms arise and challenge previous expectations, it usually will fall to courts to manage legal issues raised by novelty and restabilize normative expectations accordingly.<sup>97</sup> As part of this process, courts consider the potential consequences of the adoption of different legal interpretations and solutions.<sup>98</sup>

An important distinction must be made at this juncture: as the legal system operates autonomously by its own logic only, its internal decision-making apparatus, i.e. the courts can only consider *legal* consequences. When judges decide on the generalization of norms, it is inevitable for them to examine the effects their decision may have on other legal scenarios and existing law.<sup>99</sup> Additionally, the legal system's interpenetration into surrounding subsystems for expertise, as is the case when courts consider expert witnesses in order to incorporate specialized information from other subsystems, is a common legal operation.<sup>100</sup> However, it is indeed questionable whether the primary, norm-independent consideration of consequences external to the system – such as effects on economic processes or socio-political objectives – still can be considered a predominantly legal operation.<sup>101</sup> Where courts nevertheless do so, the rational of the legal system becomes subservient to operations of other subsystems.

The observations above can be transferred to the rulings *Thumbnails I – III* as well as *Andersen v. Stability AI*. The BGH explicitly states that society needs search engines in order to use the Internet in a meaningful way. Judges, working within the confines of their legal training, cannot conduct educated evaluations regarding how the Internet or society may develop without search engines. These are questions that go beyond the legal system's logic, especially in the face of the BGH blatantly sidelining applicable copyright law. The BGH's prognoses *Thumbnails I – III* in are not examinations of legal consequences, but socio-political imagination based on assumptions.<sup>102</sup> Similarly, the direct consideration of factors outside the law in *Andersen v. Stability AI* would not represent an internal operation within the legal system. For example: if the District Court were to assess the impact its decision may have on the business model of AI companies; or ponder the decision's impact on the global AI race; or go ahead and evaluate the general societal benefits of GenAI social politics, the considerations would have to be regarded as fundamentally external to the legal system. They are neither part of copyright doctrine nor do they relate to specific *legal* consequences or can be regarded as isolated imports of specialized information from other subsystems assisting the court's legal decision.

I will not provide a classification or assessment of whether the BGH made the *right*, i.e. socially appropriate decision in *Thumbnails I – III*. After all, it can certainly be argued that search engines are indispensable to users' navigation within the vast landscape of the Internet and that a ban would therefore hardly be practicable.<sup>103</sup> Perhaps the BGH could only really do justice to the reality of the information age by looking for solutions beyond the confines of their possibilities. In any case, where the

<sup>96</sup> Christoph B. Graber, *Copyright Insight Out: A Legal Sociologist's Perspective* in Hanns Ullrich, Peter Drahos and Gustavo Ghidini (eds), *Kritika: Essays on Intellectual Property Volume 6*, Cheltenham UK / Northampton MA: Edward Elgar, 2024, at 137.

<sup>97</sup> *Ibid.*, at 133.

<sup>98</sup> Luhmann, *supra* note 4, at 378.

<sup>99</sup> *Ibid.*, at 380.

<sup>100</sup> See Luhmann, *supra* note 4, at 89-91.

<sup>101</sup> Luhmann, *supra* note 79, at 47-8.

<sup>102</sup> See Luhmann, *supra* note 4, at 382.

<sup>103</sup> See Sag, *supra* note 32, at 10-1; Graber, *supra* note 96, at 134.

application of the law is not based on the letter of the law and legal tradition but on external factors instead, legal certainty fades away. On the contrary, unpredictable legal outcomes may have a paralyzing effect for many stakeholders, as in the case of AI developers and creatives alike waiting for the copyright classification of AI training. In such cases, it becomes clear that the reality of positive copyright law does not correspond to the reality of accelerating technological change. How does this tendency come about and what could it mean for the function of the law?

As a reminder, the basic condition leading to the functional differentiation of the legal system was increasing complexity within society necessitating a system capable of managing expectations. In the information age, this complexity is characterized by social fragmentation and an increasing rate at which change occurs.<sup>104</sup> Copyright law, as a product and reflection of the economic, political, and cultural development of society fueled by novel technologies, cannot escape this trend. Reflecting upon the disruptive tendencies of technology as observed in the cases above, where positive law did not suffice, judges looked towards extra-legal considerations. It stands to reason that this judicial overreach is caused by the legal system not offering sufficient internal possibilities to tackle technological progress. If the legal system is to continue to produce *law*, it must develop a high degree of internal complexity that can accommodate the changes produced by a constant stream of innovation.

Disruptive technologies and their effects on society demand norms to be functionally certain and adaptable at once. Society thus has a *dual expectation* of the legal system: on the one hand, it seeks certainty in the form of normative expectations in light of the multitude of technological developments and disruptions. On the other hand, expectations must be adaptive, i.e. cognitive, in order to be able to accommodate new societal possibilities as they unfold, continuously integrating and stabilizing expectations into law. It appears that the rigid must be affixed onto the dynamic in an attempt to expect the *unexpected*.<sup>105</sup>

#### 4.3 THE FUTURE OF COPYRIGHT LAW – THE END OF NORMATIVITY AS WE KNOW IT?

Past technologies disruptive to copyright law such as private audio recorders and copying devices merely challenged the legal status quo infrequently. Legislators had several years to observe changes and adapt or create laws incrementally. Courts were rarely forced to rule on issues that were fundamentally new to written law and had not been foreseen by lawmakers. Not only did disruptive innovation occur less frequently, without the internet it spread at a much slower rate. In a stark contrast to the spread of private copying technology in the 20<sup>th</sup> century, ChatGPT instantly became the focal point of media attention and was available to users around the world immediately. The example demonstrates how the temporal problem that led to the differentiation of the legal system, i.e. managing time by stabilizing expectations in uncertainty, is becoming increasingly acute: growing urgency for courts to decide over disputes triggered by accelerating technological innovation coupled with society's growing complexity is creating a gap between the wish for positive law to provide certainty in the form of rigid legal orders and the necessity for great normative flexibility capable of facilitating socially adequate solutions in rapidly emerging and changing case constellations. Consistent with the BGH's handling of *Thumbnails I - III*

---

<sup>104</sup> For an overview, see Castells, *supra* note 2.

<sup>105</sup> Luhmann, *supra* note 79, at 145.

and the tendency seen in *Andersen v. Stability AI* regarding courts' indecision in the absence of socially adequate copyright laws, this burgeoning area of tension is the underlying reason for the shift from legislative to judiciary "lawmaking". Judges, representing the final bastion of the law, will continue to be pressed to find sensible solutions for emerging legal constellations – whether the issues can be subsumed sensibly under existing law or not. In the absence of internal legal solutions, judges have no other choice but to take on the legislative task of formulating general social policy.

This inflation of the decision-making apparatus has a potentially *de-differentiating* effect: as explained in chapter 4.1, the legal system can only assert itself as an autonomous mechanism of conflict resolution as long as it succeeds in resolving the conflicts of other social subsystems in a sovereign manner and in accordance with its own, internal logic.<sup>106</sup> In instances where courts rule according to the logic of other subsystems as seen in *Thumbnails I - III*, courts are not employing legal logic. Society then has no need for the differentiated legal system, as the subsystems in conflict, i.e. the economic or political subsystems, can operate without it.<sup>107</sup> If, for example, the economic subsystem were to solve the problem of AI training by its own logic, the outcome would be straight forward, as any practice that is profitable would have to be enabled and the considerations of creatives/rights holders would probably be deemed economically negligible compared to the potential profitability of unleashed AI prowess.

Without legal norms, courts are forced to rely on pseudo-legal factors from other systems.<sup>108</sup> If the legal system lacks internal complexity, it cannot resolve conflicts autonomously. In practice, this partial de-differentiation in the form of the commercialization and/or politicization of the law strains the judiciary, as legally trained judges are required to act as interdisciplinary social experts in unfamiliar areas of society. In turn, they become prone to error.<sup>109</sup> This development damages public trust in the judiciary and, moreover, can impact litigation practice and legal reasoning in general: rulings guided by generalized considerations of social adequacy instead of legal norms would no longer correspond to the traditional judicial process. To put it in practical terms, litigators would no longer be able to rely on precedent and proven techniques of legal deduction and argumentation because they would have to resort to the limitless playing field of moral and socio-economic reasoning.<sup>110</sup>

One reading of this emerging phenomenon is that, in the current tension of society's dual expectation of the legal system, the importance of cognitive elements of expectations, i.e. their ability to adapt to change, seem to outweigh the normative elements providing certainty. Accordingly, the law must be able to react fluidly to immediate problems. According to this interpretation, the tendency towards de-differentiation must be understood as part of the process of shifting from normative to cognitive expectations: as a result, the law enables the mutual adaptation of all subsystems to each other.<sup>111</sup> Hence, courts must rule with direct reference to the economy and politics, as the network society of the information age simply demands porous subsystem borders.

---

<sup>106</sup> Amstutz, *supra* note 95, at 157.

<sup>107</sup> Amstutz, *supra* note 95, at 161.

<sup>108</sup> Luhmann, *supra* note 94, at 47.

<sup>109</sup> Luhmann, *supra* note 79, at 48.

<sup>110</sup> See *ibid.*, at 47-52.

<sup>111</sup> Lars Viellechner, 'The Network of Networks: Karl Heinz Ladeur's Theory of Law and Globalization' (2009) *German Law Journal*, 10(4), pp. 515-536, at 521.

An alternative interpretation classifies this trend not as a slow departure from the rigid normative character of the law, but more as a sign of evolution than a changing of the guard: since the speed of innovation and disruption of new technologies is increasing, it is no longer possible to rely solely on normative expectations in the established form of inflexible legal norms. The legislative process is too sluggish, changes to specific statutory laws seem like a mere drop in an ever-moving ocean. In conclusion, the copyright order of the future requires an interplay of normative and cognitive expectations.<sup>112</sup> The assumption that this calls for the “dominance of cognitive mechanisms”<sup>113</sup> proves to be semantically imprecise to say the least. The conditions under which the legal system differentiated itself in the modern age continue to exist with greater urgency in the information age. With increasing complexity, predictability is more in demand than ever before. This raises the question of how predominantly cognitive expectations, which are volatile in nature, can be manifested without normative contours guiding them. Stable normative expectations are easier to institutionalize than fluid cognitive ones.<sup>114</sup> In that vein, underlying legal principles and fundamental rights in particular *require* normativity. Especially when the machinery of technological acceleration and its vision of “progress” are set in motion, the *dominance of normative mechanisms* must stabilize social expectations before controlled fluidity and the ability to learn and adapt comes into play.

The opinion represented in this paper does not interpret courts’ tendency to focus on the social adequacy of the consequences of their rulings as heralding the de-differentiation of the law or the primacy of cognitive expectations. Rather, this trend initially represents an irritation, a suggestion that the law, with its current degree of internal complexity, is reaching a limit and must evolve. This becomes particularly evident in copyright law, a legal field which is at the cutting edge of technological development and therefore particularly exposed to change. While it becomes clear that normative expectations – whether as legal or as social norms – will continue to play a key role in legal orders, the integration of more flexible cognitive components will inevitably become pivotal in any future concept of copyright law. Methodologically, the transition from a socio-legal description of law to a theoretical and normative prescription takes place at this juncture: how must a normative order be reassessed in the 21<sup>st</sup> century in order to be able to sustainably synthesize predictability as well as adaptability in the complex reality of the information age? How must we expect the *unexpected*?

## 5. OUTLOOK

The dynamism of technological innovation will continue to impact and disrupt society. The legal system which provides society with predictability, becomes subjected to a seemingly paradoxical interplay between normativity and adaptability: the law must retain its normative qualities while flowing with innovation and adapting to new environments. It must guide and be guided at once.

---

<sup>112</sup> Niklas Luhmann, *Die Weltgesellschaft*, in Niklas Luhmann, *Soziologische Aufklärung 2*, Wiesbaden: Springer Fachmedien, 1991, at 56.

<sup>113</sup> Lars Vellechner, *Das Recht der Weltgesellschaft*, in Marc Amstutz and Andreas Fischer-Lescano (eds) *Kritische Systemtheorie*, Bielefeld: transcript, 2013, at 287; “*Dominanz von kognitiven Mechanismen*”, translated by the author.

<sup>114</sup> Luhmann, *supra* note 112, at 56.

Anyone looking towards this paper for immediate answers for the current legal uncertainty surrounding AI training will be disappointed. Quickfire doctrinal solutions will not emerge overnight for the copyright challenges triggered by GenAI and cases such as *Andersen v. Stability AI*. As in *Thumbnails I - III*, courts will likely have to apply not only the law but their interpretation of social adequacy to find broadly accepted solutions through their rulings. The diagnosis of the law's lack of options, the legal system's lack of internal complexity, continues to force judges to import unprocessed considerations external to the legal system into courtrooms. As explained above, this predicament has the potential to permanently damage legal practice and society's trust in the judiciary.

Our understanding of normative orders must adapt to the complex reality of the information age in order to counteract this trend. However, neither fatalistic swan songs about the end of normativity nor the insistence on traditional forms of legal positivism will prove fruitful. Rather, it is up to legal researchers to continue to observe and investigate the characteristics of the techno-social reality of the 21<sup>st</sup> century and reimport their findings into the law in order to find structural solutions. Jurisprudence informed by legal sociology can make a major contribution to this goal: legal sociology makes it possible to observe the law and society from an outside perspective, a bird's view. In a second step, the observations may be processed reflexively and implemented into law in the form of normative development, from what *is* to what *ought to be*.<sup>115</sup> This requires a critical, interdisciplinary approach to the law that challenges the orthodox understanding of legal propositions. Legal orders with an emphasis on social norms which emerge from within society and reflect normative expectations adequately could be sought, as well as legal theory which specifically grapples with the role of law in a complex globalized society.<sup>116</sup> Further, regarding copyright law, there seems to be a necessity to reevaluate what exactly ought to be protected: how is the concept of *copying* to be understood and reinterpreted in this day and age characterized by intelligent machines and copy-reliant technologies? Within which normative principles and definitions can a sustainable, adaptive legal structure be conceived? In order to disentangle these questions, Herculean in scope as they may seem, researchers must withstand the pull of short-term doctrinal fixes. Sustainable answers will only be found within foundational, theoretical reflections of the law.

---

<sup>115</sup> Christoph B. Graber, *Legal Sociology*, in Marc Thommen (ed), *Introduction to Swiss Law*, Zurich: sui generis, 2022, at 108.

<sup>116</sup> Further reading: Shapiro, supra note 52; Roger Cotterrell, *Sociological Jurisprudence: Juristic Thought and Social Inquiry*, London / New York: Routledge, 2017; Christoph B. Graber, 'Bottom-up constitutionalism: the case of net neutrality' (2016) *Transnational Legal Theory*, 7(4); Angelo Jr Golia and Gunther Teubner, 'Societal Constitutionalism: Background, Theory, Debates' (2021) *ICL Journal*, 15(4); Gunther Teubner, *Constitutional Fragments: Societal Constitutionalism and Globalization*, Oxford UK: Oxford University Press, 2012.