

i-call working paper

No. 2023/02

Copyright Insight Out: A Legal Sociologist's Perspective

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MARCH 2023

ABSTRACT

In my work as a researcher and teacher of legal sociology, copyright issues have always played an important role. I have been particularly interested in studying how copyright has changed under the influence of technology. The start of my career as a law professor in 1998 coincided with the invention of file sharing. In the years that followed, I used file sharing in my teaching to illustrate how digital technology challenged the effectiveness of government sanctions as a means of copyright enforcement. In my research, exploring the relationship between materiality and sociality, or how technological infrastructure and law interact, has become central. It focuses on the concept of normative expectations and the related question of how the law can regulate norm-building processes in a social context. Overall, the law and society perspective has proved useful in analysing the social impact of a new technology and in incorporating the insights gained into legal practice in order to make concrete suggestions for improvement.

KEY WORDS

Legal sociology and copyright; filesharing; DRM; technological affordances; normative expectations; copyright exhaustion principle.

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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: Christoph B. Graber, 'Copyright Insight Out: A Legal Sociologist's Perspective', *i-call Working Paper No. 02 (2023)*, Zurich, Switzerland: University of Zurich.

Published by:
i-call, Information • Communication • Art • Law Lab at the University of Zurich
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ISSN 1664-0144
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1. FILE SHARING: A NEW TECHNOLOGY SHAKES UP THE MUSIC INDUSTRY

At the turn of the millennium, the advent of file sharing hit the music industry like a bomb. Digital technologies made it possible for users to create perfect copies of a song at no cost, and on peer-to-peer networks, a mouse click was now all it took to distribute these copies to a large audience.

A revolutionary moment in the history of the music industry was the invention of Napster in 1999.¹ An innovative peer-to-peer architecture allowed Napster's users to share music on the Internet without being limited by bottlenecks when many users simultaneously retrieve information from the same server. Rather than redistributing the music shared by the users, Napster worked with a directory stored on a central server that managed in real time the names of the participating users, the songs shared and their locations on the users' computers.² The central directory was Napster's undoing, as it allowed the music industry to sue the file-sharing service in court. After multiple lawsuits had led to the shutdown of Napster in 2001, the proliferation of decentralised services such as Kazaa and BitTorrent clients like The Pirate Bay (TPB) made prosecution much more burdensome.³ The European Court of Justice (ECJ) later described the functioning of TPB's BitTorrent Protocol as follows:

"The essential characteristic of BitTorrent is that it divides files for sharing into segments, thus removing the need to rely on a central server to store those files, which lessens the burden on individual servers during the sharing process. In order to be able to share files, users must first download specific software called 'BitTorrent Client', which is not provided by the online sharing platform TPB. 'BitTorrent Client' is software which allows the creation of torrent files."⁴

The effect of this technological innovation on file sharing was like that of the Hydra, the many-headed monster that grows two heads when one is cut off. The end of Napster was by no means a death blow to copyright piracy, but new types of technologically more sophisticated file-sharing networks emerged that were no longer easy to sue.

The next chapter in the fight against piracy was opened in 2003 when the entertainment industry in the US started suing individual file sharers on a large scale for copyright infringement. Between 2003 and 2009, more than 35,000 lawsuits were lodged against file sharers before courts in the US and EU.⁵ Some court proceedings resulted in particularly severe penalties.⁶ In the US, a single mother who had traded 24 songs via Kazaa was fined USD 1.92 million in 2009, which is USD 80,000 per song. Another US verdict causing a worldwide sensation was against a student who was required to

¹ Peter Jan Honigsberg, 'The Evolution and Revolution of Napster' (2002) *University of San Francisco Law Review*, 36 (2), pp. 473–508.

² Honigsberg, *supra* note 1, at 474.

³ Joost Poort, et al., 'Baywatch: Two Approaches to Measure the Effects of Blocking Access to The Pirate Bay' (2014) *Telecommunications Policy*, 38 (4), pp. 383–392, at 385–6.

⁴ ECJ, *Stichting Brein v Ziggo*, Case C-610/15, 14 June 2017, at paras 9–12.

⁵ Sonia Katyal, 'Filtering, Piracy Surveillance and Disobedience' (2009) *Columbia Journal of Law and the Arts*, 32 (4), pp. 401–426, at 419–20.

⁶ For an overview see 'Keeping pirates at bay', *The Economist*, 5 September 2009.

pay USD 675,000 in damages for trading 30 songs. In Sweden, the operators of Pirate Bay were sentenced in 2009 to a total of USD 3.6 million and one year in prison.⁷

2. TECHNOLOGY COMES TO THE AID OF COPYRIGHT ENFORCEMENT

Contrary to what the music industry had expected, the many court cases and harsh verdicts could not cause copyright piracy to disappear. Instead, they exposed the inefficiencies of court proceedings. They prompted the entertainment industry to change its strategy by the end of 2008 and rely on technology rather than law for copyright enforcement in the future.⁸ Digital Rights Management (DRM), on the one hand, and filtering technologies, on the other, became the two main pillars of the entertainment industry's new copyright enforcement strategy.

DRM is a remarkably complex technical protection measure that can be compared with a digital fence around digital content. The technology can be programmed to grant access to protected content only to users who have purchased a licence for it.⁹ The downside of DRM is that it also excludes uses that are legally permitted by copyright exceptions, such as fair use. However, it soon became apparent that DRM critics were right who had been claiming that any DRM scheme would be cracked in the long term.¹⁰ Since the first days of the Internet, hackers have been demonstrating that even the most sophisticated technical protection measures can be circumvented.¹¹ The entertainment industry reacted to this as early as the beginning of the 1990s by pushing to ban circumvention software. With intensive lobbying, it got the member states of the World Intellectual Property Organization (WIPO) to adopt two new treaties¹² that prohibit the circumvention of DRM and other technical protection measures. These two treaties had to be implemented by the Contracting States in their respective national laws. An important question to resolve was how the WIPO treaties' anti-circumvention rules could be implemented while respecting existing copyright exceptions. The United States and the European Union chose a strict transposition in the Digital Millennium Copyright Act¹³ and the Copyright in the Information Society Directive,¹⁴ respectively. Much to the displeasure of the entertainment industry, Switzerland opted for a more user-friendly solution in its 2007 reform of the Federal Copyright Act

⁷ Jemina Kiss, 'The Pirate Bay Trial: Guilty Verdict', *The Guardian*, 17 April 2009.

⁸ Katyal, *supra* note 5, at 419–20.

⁹ Dan L. Burk, 'Legal and Technical Standards in Digital Rights Management Technology' (2005) *Fordham Law Review*, 74, pp. 537–573; Christoph B. Graber, 'Copyright and Access – a Human Rights Perspective', in Christoph B. Graber, et al. (eds), *Digital Rights Management: The End of Collecting Societies?*, Bern: Stämpfli, 2005, pp. 71–110, at 72.

¹⁰ See John Palfrey, *Holding Out for an Interoperable DRM Standard*, in Christoph B. Graber, et al. (eds), *Digital Rights Management: The End of Collecting Societies?*, Bern: Stämpfli, 2005, pp. 1–26, at footnote 1.

¹¹ Helen Nissenbaum, 'From Preemption to Circumvention: If Technology Regulates, Why Do We Need Regulation (and Vice Versa)?' (2011) *Berkeley Technology Law Journal*, 26, pp. 1367–1386, at 1380.

¹² WIPO Copyright Treaty of 23 December 1996 and WIPO Performances and Phonograms Treaty of 23 December 1996.

¹³ 17 U.S. Code § 1201.

¹⁴ 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, OJ L 167, 22.6.2001.

(CopA).¹⁵ The reform was guided by the principle that the protection of technical measures should not jeopardise the existing balance between intellectual property (IP) rights and IP exceptions. The solution found provides that interference with technical protection measures is, in principle, prohibited (Article 39a, para 1 CopA). However, if the interference serves exclusively the purpose of making a legally permitted use of the protected work or subject matter, then it can be prosecuted neither under civil nor criminal law (Article 39a, para IV CopA).

Filtering technologies have become an essential means of copyright enforcement since the entertainment industry began to focus its enforcement strategy on Internet intermediaries rather than individual users.¹⁶ To maintain copyright enforceability under conditions of widespread piracy, the entertainment industry lobbied in the US and EU to transfer some of the transaction costs associated with monitoring rights online and prosecuting copyright infringement to Internet service providers and similar intermediaries.¹⁷ In the US, online intermediaries, so far considered neutral mediators,¹⁸ were made to accept this regime change with the promise that the existing immunity rules based on copyright safe harbours would remain untouched. The *quid pro quo* for the safe harbours was the content-sharing intermediaries' willingness to use upload filters to proactively detect copyright-infringing user-generated content (UGC) and remove it from their servers based on a notice-and-take-down system.¹⁹ Even stricter rules have been introduced in the EU with the 2019 Directive on Copyright in the Digital Single Market (DSM).²⁰ Article 17 DSM tightens the liability rules for platforms with UGC, known in EU jargon as online content-sharing service providers (OCSSPs). Article 17(3) DSM clarifies that the limited liability for hosting providers, according to Article 6 of the Digital Services Act²¹ does not apply to OCSSPs. To avoid liability for unauthorised publications of copyrighted works, OCSSPs must also seek licences for the material uploaded by third parties. In principle, they must take measures to ensure that works for which the right holders have proven their entitlement do not become available in the first place. Although the DSM does not require upload filters, Article 17 incentivises OCSSPs to use such technologies to avoid liability.²² Critics have raised the question of whether the DSM strikes a fair balance between the interests of copyright and freedom of expression. In a decision of April 2022, the ECJ examined this

¹⁵ Federal Act on Copyright and Related Rights (Copyright Act, CopA) of 9 October 1992 (Status as of 1 January 2022).

¹⁶ Katyal, *supra* note 5.

¹⁷ Niva Elkin-Koren, 'After Twenty Years: Revisiting Copyright Liability of Online Intermediaries', in Susy Frankel and Daniel Gervais (eds), *The Evolution and Equilibrium of Copyright in the Digital Age*, Cambridge England: Cambridge University Press, 2014, pp. 29–51, at 31.

¹⁸ Elkin-Koren, *supra* note 17, at 36.

¹⁹ Jeremy De Beer and Christopher D. Clemmer, 'Global Trends in Online Copyright Enforcement: A Non-Neutral Role for Network Intermediaries?' (2009) *Jurimetrics*, 49, pp. 375–409; Annemarie Bridy, 'Copyright's Digital Deputies: DMCA-Plus Enforcement by Internet Intermediaries', in John A. Rothchild (ed.), *Research Handbook on Electronic Commerce Law*, Northampton, MA: Edward Elgar, 2016, pp. 185–208.

²⁰ Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC, OJ L 130, 17.5.2019.

²¹ Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services and amending Directive 2000/31/EC (Digital Services Act), OJ L 277, 27.10.2022.

²² Felipe Romero Moreno, 'Upload Filters' and Human Rights: Implementing Article 17 of the Directive on Copyright in the Digital Single Market' (2020) *International Review of Law, Computers & Technology*, 34 (2), pp. 153–182, at 154.

question. The Court ruled that the limitations built into Article 17 DSM ensure that freedom of expression can be respected when implemented at the Member State level.²³ These limitations result from the Charter of Fundamental Rights of the European Union,²⁴ which requires that state measures interfering with freedom of expression are provided by the law, safeguard the essence of the freedom, and respect the principle of proportionality.²⁵ About the question of upload filters, the ECJ specifies that “the application of Article 17 of Directive 2019/790 [the DSM] must not lead to any general monitoring obligation” for the providers of content-sharing services.²⁶

3. A SOCIOLOGICAL PERSPECTIVE ON LAW AND TECHNOLOGY

The shift from law to technology as the main means of copyright enforcement raises profound questions about the future of legal normativity and the relationship between law and technology. What can a legal sociology perspective contribute to the analysis of technological development and its impact on the law?

The sociological approach to law makes it possible to externalise a legal conflict and analyse it from a standpoint outside the law before – in a second step – reimporting the gained insights back into the law to improve its workings.²⁷ Legal sociology thus enables a doubling of the observation perspectives, especially since the legal practitioner’s view is mirrored via a social-science-informed second-order observation. While the methodology of legal practice and legal doctrine is limited as it primarily views the law as a formally closed and epistemically self-sufficient system, a legal sociology perspective offers an interdisciplinary approach, combining legal analysis with reflection from a social theory perspective. Accordingly, the method of legal sociology considers a legal problem in its factual context, observing the law as a realm embedded within broader societal dynamics. Within the scope of this paper, these dynamics are shaped by digital technology.

As illustrated above, DRM and filtering technologies influence and similarly control social behaviour as norms of law. What happens when regulation by technology replaces regulation by law? Digital technology in the service of copyright enforcement is over-encompassing as the black-and-white nature of code cannot address the subtleties of human behaviour and the fine-grained nature of uses permitted by the law. DRM, Dan Burk notes, “lacks the flexibility to accommodate access or usage that is unexpected or unanticipated.”²⁸ Upload filtering relies on sophisticated Deep Packet Inspection (DPI) technology that detects and automatically filters out copyright-protected materials. As the Gaiman case illustrates, DPI technology is not immune to

²³ ECJ, *Republic of Poland v European Parliament and Council of the European Union*, Case C-401/19, 26 April 2022.

²⁴ Charter of Fundamental Rights of the European Union, OJ C 364, 18.12.2000.

²⁵ ECJ, *Republic of Poland v European Parliament and Council of the European Union*, Case C-401/19, 26 April 2022, at para 63.

²⁶ ECJ, *Republic of Poland v European Parliament and Council of the European Union*, Case C-401/19, 26 April 2022, at para 90.

²⁷ For details see Christoph Beat Graber, ‘Legal Sociology’, in Marc Thommen (ed.), *Introduction to Swiss Law*, 2nd edn: *sui generis*, 2022, pp. 91–112, at 95–6.

²⁸ Dan L. Burk, *supra* note 9, at 550.

filtering out even content that a user is legally entitled to.²⁹ Neil Gaiman, a famous novelist, and comic book author, was to be honoured with the Hugo Award at the 2012 World Science Fiction Society conference, which was streamed worldwide on the Internet. The broadcast was cut off when Gaiman stepped up to the microphone to thank his voters. Instead of the speech Gaiman had hoped to give, his fans only received a message that the stream had been blocked because it violated copyright. What had happened? A computer had identified the excerpts from Gaiman's TV clips shown before his speech as copyright-protected material and automatically interrupted the stream. The culprit was the DPI technology used by the computer. As the name suggests, this technology allows one to investigate a data packet circulating on the Internet to inspect its content.³⁰ It makes it possible to filter out specific data – in the case at issue 0/1 number strings of copyrighted works. The computer compared all the content on the server of the company responsible for streaming the ceremony with lists of so-called “digital signatures”, that is, mathematical abbreviations of the copyrighted works' number strings. Such lists can contain the signatures of millions of works. If the computer finds a match, it automatically filters out the corresponding file. These examples show the need to investigate how exactly law and technology intersect. What is the relationship between law and technology, and how should we understand the normative effects of digital technology? This question challenges us to think more deeply about normativity and the concept of law in the digital age.

The starting point for this reflection is H.L.A. Hart's concept of law – still one of the most convincing characterisations of the law. For Hart, the law is defined as the unity of primary rules of obligation with secondary rules.³¹ Primary rules of obligation “are concerned with actions that individuals must or must not do”.³² Secondary rules are related to the functioning of primary rules; they include a rule of recognition, a rule of change and a rule of adjudication.³³ Regarding primary rules, Hart emphasises that these are *rules of obligation*. Characteristically, such rules limit the free use of violence, theft and deception.³⁴ These rules are of such essential importance for a society that they are thought of in terms of obligation.³⁵ One can speak of an obligation if there is 1) serious social pressure, 2) a necessity to maintain a highly prized social goal, and 3) an element of sacrifice or renunciation is involved.³⁶ A distinction must be made between “being under an obligation” and “being obliged” to do something.³⁷ The question of whether someone is under an obligation refers to the “internal aspect of rules,”³⁸ that is, how legal subjects themselves observe the rules, whether they accept the rules, and whether they consider the rules legitimate. The distinction between external and

²⁹ The Award for Irony goes to ... How Copyright protection can sometimes go wrong, *The Economist*, 5 September 2012, <https://www.economist.com/babbage/2012/09/05/the-award-for-irony-goes-to>.

³⁰ Ralf Bendrath and Milton Mueller, 'The End of the Net as We Know it? Deep Packet Inspection and Internet Governance' (2011) *New Media & Society*, 13 (7), pp. 1142–1160.

³¹ H. L. A. Hart, *The Concept of Law*, Oxford: Clarendon Press, 1961, at 91.

³² Hart, *supra* note 31, at 92.

³³ Hart, *supra* note 31, at 92–5.

³⁴ Hart, *supra* note 31, at 89.

³⁵ Hart, *supra* note 31, at 85.

³⁶ Hart, *supra* note 31, at 85.

³⁷ Hart, *supra* note 31, at 85–6.

³⁸ Hart, *supra* note 31, at 86.

internal perspectives on the law is crucial because, according to Hart, an external observer cannot understand what “constitutes the normative structure of society”.³⁹

We have here a characterisation of what is at the core of the law’s normativity. It allows us to grasp the major difference between regulation by law and regulation by technology. Digital architectures such as DRM systems contain constraints that delimit the possible access to and use of digital content. In the sociology of technology literature, such limitations are called “prescriptions” or “affordances” embedded in artefacts.⁴⁰ The design constraints shape social behaviour as they enlist a user to behave in a certain way. The question is whether the coercive effects of technology make design constraints rules of obligation. Hart’s response would be a resounding “No!” – insisting on distinguishing design prescriptions from normative structures and law. To illustrate the relevance of this distinction, think of a user of a DRM-protected e-book. The user would be correct to say that she *is obliged* by the technology if the DRM factually restrains her book use. This would be the case if the DRM’s design prescriptions *factually* prevented her from saving a copy of the e-book on her computer, even though she would be *legally* permitted to make a private copy. However, the user would be wrong to state that she is *under an obligation* to follow the DRM rule. The reason is the technological prescriptions’ lack of legal legitimacy. In difference to the law, the rules inscribed into the DRM system have not been deliberated over in a democratic process. Moreover, these scripts have not been enacted by the constitutionally competent legislative body. Instead, it is the company owning the IP rights in the content that also controls the DRM, defining the possibilities and constraints existing within this technological architecture.

4. ARE NORMATIVE EXPECTATIONS OBSOLETE IN THE DIGITAL SOCIETY?

Hart is a legal positivist, stressing the need to separate law and morality.⁴¹ His reference to the internal aspect of rules should thus *not* be understood as an argument for a *moral* obligation of citizens to accept the law.⁴² For Hart, there need not be particular reasons for someone to obey a rule of obligation; it is sufficient that “people treat the law as giving reasons for action”.⁴³ It is interesting to think about how people come to treat specific rules as rules of law. This question has been discussed in famous texts of legal sociology, describing how normative expectations come into being. Max Weber, for example, argues that norms often originate “aboriginally”, starting with an individual’s subjective attitudes toward others, then evolving from mere habituation to awareness of others’ behaviour and eventually turning into counterfactually confirmed expectations.⁴⁴ For Weber, an order of counterfactual expectations is a

³⁹ Hart, *supra* note 31, at 89.

⁴⁰ For references see Dan L. Burk, ‘DNA Rules: Legal and Conceptual Implications of Biological “Lock-Out” Systems’ (2004) *California Law Review*, 92, pp. 1553–1587, at 1554.

⁴¹ H. L.A. Hart, ‘Positivism and the Separation of Law and Morals’ (1958) *Harvard Law Review*, 71 (4), pp. 593–629.

⁴² See Brian H. Bix, ‘Kelsen, Hart, and Legal Normativity’ (2018) *Revus - Journal for Constitutional Theory and Philosophy of Law* (34), pp. 1–18, at 5.

⁴³ Bix, *supra* note 42, at 6.

⁴⁴ Max Weber, *Economy and Society: An Outline of Interpretive Sociology*, translated by Günther Roth, Berkeley: University of California Press, 1978 (1922), 754.

“convention” if the sanction for its violation is disapproval within a given social group. Only then can a normative order be called law when there are external guarantees that it will be enforced with physical coercion.⁴⁵ The source of such coercion can be the state or other forms of legitimate social pressure.

Weber’s conviction that the state is not the only source for the emergence of new law is shared by many legal sociologists. In contrast to the relatively homogeneous society in which Weber lived, today’s society is highly complex, heterogeneous, and fragmented. Even in the hypercomplex society of the 21st century, new law emerges not only from legislation and adjudication but also from the midst of society. In a rapidly changing world, processes of learning are gaining importance. In the literature, it has been argued that normative behavioural expectations tend to be replaced by cognitive behavioural expectations. Karl-Heinz Ladeur, for example, claims that the technical conditions of the network society eventually lead to the dissolution of the distinction between cognitive and normative expectations.⁴⁶ He justifies his thesis with the argument that social development in Western Europe over the last 200 years has been shaped by specific distribution media, including language, writing, printing and computer networks. By conceptualising media change as the cause of changes in the structure of society, Ladeur reveals proximity to Thomas Vesting’s media theory of law (and society), arguing for an understanding of legal communication that always carries the “trace of the media that it uses.”⁴⁷ For Ladeur, in the “society of networks” of the 21st century, digital technologies define a new governance model that fundamentally alters the conditions of possibility of individual action and autonomy.⁴⁸ The individual is transformed into a *subject of the network society*, which must be more open to experimental thinking and new developments. Therefore, Ladeur argues, “the mobilization and hybridization of the relationship between cognitive and normative components of the law can globally be identified as the preeminent feature of the law of the society of networks.”⁴⁹ While I would agree with Ladeur that individuals’ learning is crucial in the digital ecosphere, I do not agree that normative expectations disappear. I suggest that we should instead reflect on how behavioural expectations can change.

Following a suggestion by Johan Galtung,⁵⁰ Niklas Luhmann distinguishes between normative and cognitive expectations.⁵¹ The difference between these two expectation styles can be seen in a subject’s reactions to disappointment. While *cognitive* expectations are adapted in a learning process, *normative* expectations are generally upheld, although violations may occur in singular cases.⁵² Adopting a level of second-order observation, it is possible to analyse combinations of normative and cognitive

⁴⁵ Weber, *supra* note 44, 34.

⁴⁶ See Karl-Heinz Ladeur, ‘Die Netzwerke des Rechts und die Evolution der «Gesellschaft der Netzwerke»’, in Michael Bommes and Veronika Tacke (eds), *Netzwerke in der funktional differenzierten Gesellschaft*, Wiesbaden: VS Verlag, 2011, pp. 143–171, at 157–8; see also 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.

⁴⁷ Thomas Vesting, *Legal Theory and the Media of Law*, translated by James C. Wagner, Cheltenham UK, Northampton, MA, USA: Edward Elgar Publishing, 2018, at 87.

⁴⁸ Karl-Heinz Ladeur, ‘Die Zukunft der Medienverfassung’, in Karl-Heinz Ladeur, et al. (eds), *Die Zukunft der Medienverfassung*, Tübingen: Mohr Siebeck, 2021, pp. 17–89, at 31.

⁴⁹ Ladeur, *supra* note 46, at 160 (translation by the author).

⁵⁰ Johan Galtung, ‘Expectations and Interaction Processes’ (1959) *Inquiry*, 2 (1-4), pp. 213–234.

⁵¹ Niklas Luhmann, ‘Normen in soziologischer Perspektive’ (1969) *Soziale Welt*, 20 (1), pp. 28–48, at 36.

⁵² Luhmann, *supra* note 51, at 35–7.

expectations and ask, “how are expectations expected?”⁵³ From a level of second-order observation, Luhmann argues, an observer “can expect normative expectations either normatively or cognitively as long as the various levels of observation can be differentiated”.⁵⁴ Luhmann continues:

“Then one can expect normatively, on one hand, that normative expectations ought to be maintained and implemented, and the support for the legal system in society as a whole depends largely on this mode of expecting. On the other hand, one can just as well expect that, in a cognitive context, normative expectations can also be changed through learning (for instance, by having regard to the eventual outcomes of legal decision-making), or even that they should be changed (when looked upon from a tertiary level of observation).”⁵⁵

Accordingly, the distinction between levels of observation is critical to the analysis of combinations between normative and cognitive expectations.

5. FORMING EXPECTATIONS ABOUT A TECHNOLOGY’S AFFORDANCES

Dealing with complexity and contingency is a central problem in modern society. In the formation and adaptation of behavioural expectations, the level of complexity will depend on whether the counterpart of the expecting subject is a human being or an object of nature. Adaptation processes between humans are highly complex, as they occur under double contingency conditions, that is, Luhmann writes, the encounter of two mutually impenetrable black boxes. The basic situation of double contingency is then simple: two black boxes, by whatever accident, come to have dealings with one another. Each determines its own behaviour by complex self-referential operations within its own boundaries. What can be seen of each is therefore necessarily a reduction. Each assumes the same about the other. Therefore, however many efforts they exert and however much time they spend (...), the black boxes remain opaque to one another.⁵⁶ Due to double contingency, adaptation between humans depends on learned expectations of expectations.⁵⁷ Adaptation is easier concerning objects of nature; it is sufficient to learn through adapting expectations about an object’s behaviour. How does the baseline change when the object for which expectations are to be adjusted is a digital technology? How can we understand the formation of normative expectations about digital artefacts or systems?

In this context, the term “affordance” is helpful. The term is increasingly used in interdisciplinary research on law, society and technology to describe limitations or opportunities of social action that are inherent in a technology. The term “affordance”

⁵³ Niklas Luhmann, *Law as a Social System*, translated by Klaus Alex Ziegert, Oxford, New York: Oxford University Press, 2004 (1993), at 108.

⁵⁴ Luhmann, *supra* note 53, at 108.

⁵⁵ Luhmann, *supra* note 53, at 108.

⁵⁶ Niklas Luhmann, *Social Systems*, translated by John Bednarz with Dirk Baecker, Stanford Calif.: Stanford University Press, 1995 [1984], at 109.

⁵⁷ Luhmann, *supra* note 51, at 32.

was coined in 1979 by the perceptual psychologist James Gibson.⁵⁸ Gibson assumes that animals can selectively perceive information in their environment. Which information is selected depends on how significant it is for the animal's survival. Affordances are thus information in the environment that is functionally important as opportunities or invitations for the living system. Gibson places the (natural) environment at the centre of his affordance theory, emphasising the relative independence of the environment from its perception by living systems. Gibson's approach corresponds to the "external realism" advocated by the philosopher John Searle, that is, the assumption that the natural environment exists independently of the ideas we have about it.⁵⁹ Social reality is different. We construct it by agreeing on its validity and distinguishing between states of the world that are "*intrinsic to nature*" and those that exist "*relative to the intentionality of observers, users, etc.*"⁶⁰

If the term "affordance" refers to the possibilities and limitations inherent in a technology, the critical question is: How do affordances get into technologies? This question has been a topic of discussion in Science and Technology Studies (STS) for decades. Authors such as Don Ihde, Bryan Pfaffenberger and Andrew Feenberg emphasise the inherently *multiple character* of technologies.⁶¹ This expresses flexibility in the interpretation of technologies that manifests itself in two ways concerning a digital technology or system: first, in its development by software programmers ("design constituency") and second, in its uptake by users ("impact constituency").⁶² In a multi-level dialogue between the "design constituency" and the "impact constituency", the affordances of an individual artefact or even an entire technical field are codetermined,⁶³ whereby material, as well as communicative statements or counterstatements, are possible.⁶⁴ The ability of users to form behavioural expectations about an artefact's affordances depends mainly on the complexity of the technology at stake. Is it a technology with a relatively predictable way of working, or are we looking at a "smart" technology like a machine learning algorithm? If we are dealing with "predictable" artefacts, the formation of behavioural expectations about the object's affordances will be subject-object-related – as with regards to nature.

Concerning "smart" technologies, however, the affordances of an algorithm cannot be perceived by normal users; they remain hidden.⁶⁵ As the software of computers is invisible or impenetrable,⁶⁶ the behaviour of the digital artefact or system cannot be predicted. Therefore, the interaction between user and algorithm is characterised by a high degree of uncertainty – at least as far as ordinary users are concerned. Average

⁵⁸ James J. Gibson, *The Ecological Approach to Visual Perception*, New York, NY: Psychology Press, 2015 (1979).

⁵⁹ John R. Searle, *The Construction of Social Reality*, London: Penguin, 1995, at 150.

⁶⁰ Searle, *supra* note 59, at 9 (emphasis in the original).

⁶¹ Don Ihde, *Technology and the Lifeworld: From Garden to Earth*, Bloomington and Indianapolis: Indiana University Press, 1990, at 144. Ihde uses "multistable" as an attribute for technology.

⁶² Bryan Pfaffenberger, 'Technological Dramas' (1992) *Science, Technology & Human Values*, 17 (3), pp. 282–312.

⁶³ Andrew Feenberg, *Technosystem: The Social Life of Reason*, Cambridge, Mass: Harvard University Press, 2017, at 45–8, and 54–9.

⁶⁴ For a detailed discussion see Christoph B. Graber, 'Freedom and Affordances of the Net' (2018) *Washington University Jurisprudence Review*, 10, pp. 221–256.

⁶⁵ Taina Bucher and Anne Helmond, 'The Affordances of Social Media Platforms', in Jean Burgess, et al. (eds), *The Sage Handbook of Social Media*, Los Angeles, London, New Delhi, Singapore, Washington DC, Melbourne: Sage Publications, 2018, pp. 233–253, at 237.

⁶⁶ Dirk Baecker, 'Niklas Luhmann in the Society of the Computer' (2006) *Cybernetics & Human Knowing*, 13 (2), pp. 25–40, at 29.

users are not able to understand the internal operations of an algorithm. They can only see the computer screen's surface;⁶⁷ the algorithm's operations remain hidden in the background.⁶⁸ Moreover, ordinary users are in a synchronous relationship with their computer. Since this interaction is recursive and is updated with every click, the perceived surface is also subject to change.⁶⁹ Only expert users like coders or tech-savvy semi-professional activists can gain a deeper understanding of a digital technology's working. Regarding the impact constituency's capability to reject a design constituency's interpretation of a smart technology, such expert knowledge is crucial. The expertise is required to detect adverse side effects of a smart technology, raise public awareness about its social risks and mobilise civil society representatives and a broader public to build and invigorate alternative interpretations of the technology. If such a campaign is successful, normative expectations about the artefact's affordances may eventually emerge.⁷⁰

According to Luhmann, the law is the social system that is specialised in stabilising and generalising normative expectations.⁷¹ Because generally shared values are precarious in a hypercomplex society, stabilising and generalising normative expectations is hard. Positive law has been the evolutionary solution to this challenge,⁷² allowing for flexible adaptation of legal norms to social change and providing, at the same time, mechanisms securing legal certainty.⁷³ To be sure, only a tiny part of all expectations is institutionalised in the form of positive law. In everyday life, expectations continue to grow from the middle of society.⁷⁴

6. COPYRIGHT COURTS STABILISING NORMATIVE EXPECTATIONS

What determines whether normative expectations about novel technologies are stabilised and generalised as legal norms? It is the role of courts to resolve questions of interpretation raised by norms that have emerged from the middle of society but remain controversial, or by newly enacted legislation.

As a first example, the particularities of search engines should be mentioned. They have occupied courts in numerous cases in recent years and forced them to reinterpret existing copyright norms. The "Google thumbnails" case shows the path chosen by the German Federal Court of Justice (BGH) to adapt German copyright law to the technical

⁶⁷ Frieder Nake, 'Surface, Interface, Subface: Three Cases of Interaction and One Concept', in Uwe Seifert, et al. (eds), *Paradoxes of interactivity: Perspectives for media theory, human-computer interaction, and artistic investigations*, Cultural and media studies, Bielefeld: Transcript, 2008, pp. 92–109, at 105.

⁶⁸ Bettina Heintz, 'Big Observation: Ein Vergleich moderner Beobachtungsformate am Beispiel von amtlicher Statistik und Recommendersystemen' (2021) *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 73 (S1), pp. 137–167, at 141; Anna Beckers and Gunther Teubner, *Three Liability Regimes for Artificial Intelligence: Algorithmic Actants, Hybrids, Crowds*, Oxford Eng: Hart, 2021, at 28–9.

⁶⁹ Bucher and Helmond, *supra* note 65, at 248.

⁷⁰ For a detailed discussion see my study on the co-production of affordances and the growth of norms regarding Facebook's like button. Christoph B. Graber, 'How the Law Learns in the Digital Society' (2021) *Law, Technology and Humans*, 3 (2), pp. 12–27.

⁷¹ Luhmann, *supra* note 56, at 147–8.

⁷² Luhmann, *supra* note 56, at 261.

⁷³ Luhmann, *supra* note 51 at 47.

⁷⁴ Luhmann, *supra* note 51, at 47–8.

functioning of “Google Images”. The BGH’s solution: Artists or photographers who have allowed third parties to make images of their works available on the Internet may not object to Google reproducing thumbnails of these images in response to a search query. Thus, the court establishes a novel privilege for Internet search engines consisting of the presumption that a right holder who has not taken any specific technical measures preventing search engines from indexing images has *implicitly consented* to the reproduction of her works as thumbnails.⁷⁵ For revocation of the right holder’s implied consent, verbal communication would not be enough; to be legally effective, the right holder would need to take technical safeguards hindering the search engine from finding the uploaded works.⁷⁶

The decisions of the BGH contain the realisation that the functional peculiarities of search engine technology force copyright law to find a new balance between the normative expectations of individual right holders and the general interest. It is the court that takes on the task of restabilising the normative expectations regarding a specific technology, which have been adjusted in the socio-economic context, by reformulating them in the language of the law. The solution found by the BGH has been criticised from the perspective of copyright doctrine.⁷⁷ However, the result was probably the only possible one from a practical point of view. A shutdown of “Google Images” due to the illegality of the thumbnails would not have been conceivable. Because the decision could not have been justified based on the exceptions existing in German copyright law, the Federal Supreme Court had to resort to what critics consider an excessive extension of the concept of implied consent.⁷⁸ Regarding the question in which form implied consent can be revoked, the BGH’s solution seems to have been inspired by Charles Clark’s famous motto, “The answer to the machine is in the machine”⁷⁹.

The restabilisation of expectations about the relationship between material and immaterial property rights in copyright law is another example of the challenges facing the courts because of digitalisation. In the brick-and-mortar world, the *principle of exhaustion* (or *first sale* in the United States) has proven to be a viable balance between copyright and general property rights. The exhaustion doctrine states that the right to control the transfer of ownership of a particular copy is exhausted with the first sale of that copy with the right holder’s consent. The exhaustion defence was designed by the lawmakers (not only in Europe but also in the United States) as a limitation to the right of distribution. Accordingly, the right to prohibit distribution exhausts after the first sale of the particular copy.⁸⁰

In the digital networked environment, several things have become uncertain in copyright practice, including the domain of the distribution right, the legal status of a

⁷⁵ “Thumbnails II,” Bundesgerichtshof, I ZR 140/10, October 19, 2011, para 49. For a review of the case see Birgit Clark, ‘Google Image Search Still Does Not Infringe Copyright, Reaffirms Bundesgerichtshof’ (2012) *Journal of Intellectual Property Law & Practice*, 7 (11), pp. 788–789.

⁷⁶ “Thumbnails I,” Bundesgerichtshof, I ZR 69/08, April 29, 2010, para 37.

⁷⁷ For an overview see Christophe Geiger and Elena Izyumenko, ‘Towards a European ‘Fair Use’ Grounded in Freedom of Expression’ (2019) *American University International Law Review*, 35 (1), pp. 1–74, at 15–17.

⁷⁸ See, for example, Matthias Leistner, ‘The German Federal Supreme Court’s Judgment on Google’s Image Search: A Topical Example of the “Limitations” of the European Approach to Exceptions and Limitations’ (2011) *IIC-International Review of Intellectual Property and Competition Law*, pp. 417–442, at 431.

⁷⁹ Charles Clark, ‘The Answer to the Machine is in the Machine’, in P. Bernt Hugenholtz (ed.), *The Future of Copyright in a Digital Environment*, The Hague: Kluwer Law International, 1996, pp. 139–145, at 139.

⁸⁰ See Christoph B. Graber, ‘Tethered Technologies, Cloud Strategies and the Future of the First Sale/Exhaustion Defence in Copyright Law’ (2015) *Queen Mary Journal of Intellectual Property*, 5 (4), pp. 389–408, at 393.

particular copy and the overall survival of the exhaustion defence. The ECJ first addressed these questions concerning software in the famous *UsedSoft v Oracle* judgment of 2012.⁸¹ UsedSoft (a company selling used software online) argued that the resale of computer programs produced by Oracle was justified, as the distribution right exhausted after the programs' first sale. Oracle contested the applicability of the exhaustion defence, claiming that it did not *sell* the computer programs at issue. Arguably, Oracle's customers had only purchased a licence providing them with "a non-exclusive and non-transferable user right for an unlimited period for that program".⁸² The dispute was of utmost importance for the entire software sector as it ultimately concerned the broader question of whether the exhaustion defence can withstand the shift to a software-as-a-service (SaaS) business model. This is because SaaS typically involves licensing cloud-stored software on a subscription basis rather than its sale, which raises questions about the applicability of copyright exhaustion principles.

Although Oracle's claim that it did not sell computer programs did not directly attack the exhaustion defence, it did so indirectly, as the term "sale" is the hook to the exhaustion clause under Article 4(2) of Directive 2009/24.⁸³ The ECJ made the reference to the exhaustion defence clear, stating that the term "sale" in Article 4(2) of Directive 2009/24 must be given a broad interpretation

"encompassing all forms of product marketing characterised by the grant of a right to use a copy of a computer program, for an unlimited period, in return for payment of a fee designed to enable the copyright holder to obtain a remuneration corresponding to the economic value of the copy of the work of which he is the proprietor."⁸⁴

This broad interpretation was necessary, in the ECJ's view, to prevent the circumvention of the exhaustion clause. By stating that the exhaustion defence is not limited to the distribution of copies of a software program stored on a material medium but also covers copies in intangible form,⁸⁵ the ECJ established the principle of "digital exhaustion" in the software sector.⁸⁶ According to the Court, a customer downloading a copy from the Internet expects to have acquired ownership of that copy. This expectation needs to be protected for the sake of the functioning of the EU's internal market. The finding for "digital exhaustion" in *UsedSoft* was reached based on an interpretation of Directive 2009/24, the so-called Software Directive. While the question of whether "digital exhaustion" should also apply in the context of copyrighted works beyond software demanded clarification, the ECJ was called to rule directly on that issue only in the *Tom Kabinet* decision of 2019.⁸⁷ In *Tom Kabinet*, the Court found that the supply by downloading an e-book for permanent use is a communication to the public.⁸⁸ Since it does not constitute an act of distribution for the purposes of Article

⁸¹ ECJ, *UsedSoft GmbH v Oracle International Corp.*, Case C-128/11, 3 July 2012.

⁸² ECJ, *UsedSoft GmbH v Oracle International Corp.*, Case C-128/11, 3 July 2012, at para 35.

⁸³ Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs, OJ L 111, 5.5.2009.

⁸⁴ ECJ, *UsedSoft GmbH v Oracle International Corp.*, Case C-128/11, 3 July 2012, at para 49.

⁸⁵ ECJ, *UsedSoft GmbH v Oracle International Corp.*, Case C-128/11, 3 July 2012, at para 55.

⁸⁶ See Graber, *supra* note 80, at 395.

⁸⁷ See Caterina Sganga, 'Digital Exhaustion After Tom Kabinet: A Nonexhausted Debate', in Tatiana-Eleni Synodinou, et al. (eds), *EU Internet Law in the Digital Single Market*, Cham: Springer, 2021, pp. 141–176, at 148–52.

⁸⁸ ECJ, *NUV v Tom Kabinet*, Case C-263/18, 19 December 2019.

4(1) of Directive 2001/29 EC on Copyright in the Information Society (InfoSoc Directive), such supply of e-books is not subject to the rule of exhaustion.⁸⁹ The ECJ specified “that any communication to the public of a work, other than the distribution of physical copies of the work, should be covered not by the concept of ‘distribution to the public’, referred to in Article 4(1) of Directive 2001/29, but by that of ‘communication to the public’ within the meaning of Article 3(1) of that directive.”⁹⁰ The supply of e-books is thus considered as the provision of a service with the consequence that the exhaustion defence, limited to goods, is excluded.⁹¹ The Court distinguished *Tom Kabinet* from *UsedSoft*, noting that the InfoSoc Directive is *lex generalis* compared to the Software Directive. In difference to the Software Directive, the EU legislator did not intend to assimilate tangible and intangible copies of works when it adopted the InfoSoc Directive.⁹² Because of the differences between printed books and e-books, there is no economic justification for a secondary market for the latter. While a printed book is subject to wear and tear, this is not the case with e-books, especially since they can be copied without loss of quality and redistributed without additional costs. If there were a legal secondary market for used e-books, they would compete with new e-books – an economically undesirable result for the ECJ.

What does this judgment mean for the normative expectations of e-book users? Consumers who paid for an e-book downloaded from the Internet need to adapt their normative expectations and learn that they do not own property rights in the e-book but are only licensed to use the e-book. Hence, they are deprived of several benefits that a buyer of a printed book would have beyond selling or lending it, like adding annotations, tinkering with the copy, or repairing it.⁹³ *Tom Kabinet* may end the epic discussion on digital exhaustion in the EU but fails to answer all the questions that arise for the balance in copyright in the context of digital development.⁹⁴ From a functional point of view, it is correct to assess the trade in e-books under service aspects rather than goods aspects. However, an important balancing mechanism is lost by excluding exhaustion from digital trade. This raises the question of how a new equilibrium can be found in copyright law that covers not only the relationship between intangible and tangible property but also issues of free competition and the protection of fundamental rights (including freedom of expression or privacy).⁹⁵ The impact of technological change on copyright balance forces the law to reconsider things within a more extensive, quasi-constitutional framework that recognises effects on individual autonomies (e.g., users and competitors) and social autonomies (e.g., free discourse and business).⁹⁶

⁸⁹ ECJ, *NUV v Tom Kabinet*, Case C-263/18, 19 December 2019, at paras 45–53.

⁹⁰ ECJ, *NUV v Tom Kabinet*, Case C-263/18, 19 December 2019, at para 45.

⁹¹ ECJ, *NUV v Tom Kabinet*, Case C-263/18, 19 December 2019, at para 51.

⁹² ECJ, *NUV v Tom Kabinet*, Case C-263/18, 19 December 2019, at paras 55–56.

⁹³ Graber, *supra* note 80, at 398.

⁹⁴ Arguing for a reconsideration of the exhaustion principle after *Tom Kabinet*, Péter Mezei, ‘Hop on the Roller Coaster – New Hopes for Digital Exhaustion?’ (2022) *GRUR International*, 71 (11), pp. 1017–1018, at 1017.

⁹⁵ For a similar view see Sganga, *supra* note 87, at 171.

⁹⁶ For a detailed elaboration of this argument see Graber, *supra* note 80, at 404–6.

7. CONCLUDING REMARKS

After 25 years of working as a law professor and legal sociologist, I look back on a time when the law was particularly challenged by rapid technological development. The beginning of my academic career coincided with the emergence of peer-to-peer architectures that shook the music market to its foundations. Digitalisation and global networking confronted copyright law with new questions concerning the legal legitimacy and enforcement of IP rights. The factual development provided me with much illustrative material for my teaching, which I could use to pick up my students in their life world and, at the same time, discuss essential principles of the law. The entertainment industry's strategy to increasingly use technical protection measures to counter copyright piracy became the subject of a research project on which my team and I organised an international conference and published a book.⁹⁷ The publication examined the impact of DRM on copyright management, focusing on the future of collective management of copyright. A fascinating opportunity to closely witness the effect of digitalisation on copyright practice in Switzerland and to help shape responses came during my eight years as a government-elected judge of the Federal Arbitration Commission for the Exploitation of Copyright and Related Rights (ArbCom).⁹⁸ As a prerequisite for ratifying the two WIPO Internet treaties, the Swiss Copyright Act (CopA) was amended in 2007.⁹⁹ Within the framework of this partial revision, new provisions were introduced into the CopA prohibiting the circumvention of technical protection measures under certain conditions.¹⁰⁰ The revision made numerous uses in the digital environment subject to legal licences and collective rights management. According to the CopA, the collective management organisations were required to negotiate new tariffs with the relevant user associations and submit the drafts to ArbCom for review and approval. In this work, numerous interesting questions arose for the ArbCom, such as: What copyright-relevant acts of use are undertaken in the context of a digital transaction? The practical experience I gained in this work flowed into new research projects at the university and enriched my teaching as illustrations. A regular "Copyright on the Internet" seminar provided a good vehicle to explore the latest technological trends with students from a copyright perspective. "Regulation without Law?" was the title of one novel course in which I could discuss selected impacts of the digital revolution on the law and address theoretical issues such as what this development means for our understanding of the concept of law, the concept of regulation, and the relationship between law, regulation and technology.

Overall, these experiences show how a legal sociology perspective makes it possible to analyse a new technology in the context of its social impact and to feed the insights gained into legal practice to make concrete proposals for improvement. What could be better for a legal sociologist than seeing his subject's usefulness practically confirmed?

⁹⁷ Christoph B. Graber, et al. (eds), *Digital Rights Management: The End of Collecting Societies?*, Bern: Stämpfli, 2005.

⁹⁸ Geschäftsbericht 2011 der Eidgenössischen Schiedskommission für die Verwertung von Urheberrechten und verwandten Schutzrechten, Bern 2012, at p. 5, <https://www.eschk.admin.ch/dam/eschk/de/data/geschaeftsberichte/GB-2011-d.pdf.download.pdf/GB-2011-d.pdf>.

⁹⁹ See Botschaft des Bundesrates zum Bundesbeschluss über die Genehmigung von zwei Abkommen der Weltorganisation für geistiges Eigentum und zur Änderung des Urheberrechtsgesetzes vom 10. März 2006, BBl 2006 3389.

¹⁰⁰ See above, footnote 15, and accompanying text.