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Information Civilization and the Law: Significance of Limiting Factors. Introductory Insights

1. Opening remarks

The achievements of scientific research contribute to a better understanding of the world of nature around us and of societies. In doing so, we should focus on solving existing problems and challenges, guided by the principle of sustainable development in a philosophical context.[1] It seems that when assessing the scientific nature of research we should not take into account our scientific discipline but the research problem, because it is this problem that will inform us about the scientific nature of the subject. Science requires not only a rigid methodological framework to be followed. The results achieved are often a consequence of researchers having soft competences, which are extremely important in carrying out research, and the ability to observe the reality of which we are part. Finding an important scientific problem may be a coincidence, although it is more often a product of our previous experiences and the needs that we or the people around us have noticed. I assume that most often it is noticed by our intuition, understood as a collection of our experiences, information contained

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[1] A. Papuziński, *Filozoficzne aspekty zrównoważonego rozwoju – wprowadzenie* [Philosophical aspects of sustainable development – an Introduction], "Problemy Ekorozwoju" 2006, vol. 1, no. 2, pp. 25–32; R. Ziegler, K. Ott, *The quality of sustainability science: A philosophical perspective*, "Sustainability: Science, Practice and Policy" 2011, vol. 7, issue 1, p. 32 *et seq*.

in the subconscious.[2] The proposal to study the titular research problem, although in my view related to legal sciences, includes research results obtained in other scientific disciplines. An interdisciplinary approach is extremely important because of the understanding of human action and the rights governing it.[3] Therefore, methodological correctness and the ability to choose and "mentally process" a research problem is important in science.

I am a supporter of the bottom-up research perspective, where assumptions of a metaphysical nature are blurred amidst the needs, causes and effects that occur in reality. This is why I do not treat the ontological approach as fundamental. I attempt to adopt a phenomenological position, in which I do not ask the question "why does something function?" but only "how does it function?". I realize that this amounts to avoidance of problems related to the explanation of the being, but from my point of view the function we are dealing with is more important. An attempt to possibly reconcile positions is to propose the use of formal ontology, typical of exact sciences, but applicable to the study of social phenomena. Ontology is understood as a model of knowledge, aiming to simplify the world, which has been defined and characterized by the construction of concepts through which it could describe the reality.[4]

I refer in the article to several terms such as information civilization, information society, law, logic, or communication. The meaning of last three concepts seems self-evident, but both information civilization and information society require definition for the sake of clarity and consistency of the content of the article. If civilization is considered as a period initiated by an important event, an important historical phase, then the era of information civilization began about 1980. The term *information civilization* refers to a period of time in the history of mankind, which began several decades ago and is noticeable as a successive sequence of "events", from the ubiquity of personal computers, then mobile telephony, to widespread Internet access. Further on, there will be other

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[2] H. Wellmann, *Niewiarygodna moc intuicji* [The Incredible Power of Intuition], "Świat Wiedzy" 2023, no. 5, pp. 116–121.

[3] In the area of law, we may refer to the need for external integration of legal sciences. J. Jabłońska-Bonca, K. Zeidler, *Prawnik a sztuka retoryki i negocjacji* [A Lawyer and the Art of Rhetoric and Negotiation], 3rd ed., Wolters Kluwer, Warszawa 2023, p. 51.

[4] P. Kłos, *Poufność mediacji. Analiza teoretycznoprawna* [Confidentiality of Mediation. A Theory of Law Analysis], Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin 2021, pp. 120–121; W. Grzelak, *Ontologia – próba usystematyzowania pojęć* [Ontology. An Attempt to Systematize Concepts], "Informatyka Ekonomiczna Business Informatics" 2013, no. 4(30), *passim*; B. Filipczak, J. Gołuchowski, *Perspektywy wykorzystania ontologii w procesach przetwarzania języka naturalnego w systemach zarządzania wiedzą* [Perspectives of Using Ontologies in Natural Language Processing Processes in Knowledge Management Systems], "Prace Naukowe Akademia Ekonomiczna w Katowicach" 2006, tom: *Systemy wspomagania organizacji SWO 2006*, pp. 253–262; A. Maedche, *Ontology Learning: Framework, Techniques and a Software Environment. Meaning vs Presentation. San Sebastian*, ixa2.si.ehu.eus/ixa-z-resources/meaning-workshop/slides/maedche.pdf (accessed: 30.10.2023); T.R. Gruber, *A Translation Approach to Portable Ontology Specifications*, "Knowledge Acquisition" 1993, vol. 5, no. 2, pp. 199–220; *cf.* B. Smith, *Formal ontology, common sense and cognitive science*, "The International Journal of Human-Computer Studies" 1995, vol. 43, pp. 641–667.

waves of the information revolution, involving the spread of robotics, knowledge engineering and biomedical engineering. The duration of the information civilization era is not clearly defined, but it is assumed to last until the end of the 21st century.[5] Following Andrzej Wierzbicki, I consider as the essence of information civilization the approach to information and related knowledge as a basic factor of production (alongside capital, labour, and raw materials).[6] I perceive *information society* in functional terms as a product of the relationship between the information society (system) and the environment, i.e., everything that is not the system.[7] The essence of information society is identifiable by grasping the difference resulting from the transmission of information load between the functionally distinguished information society and the environment. It is both a theoretical and dynamic construct subject to continuous change. In an attempt to capture the essence of information society, I use Niklas Luhmann's paradigm of "system and environment".[8] Finally, the relationship between the presented terms needs to be clarified. The concept of information civilization provides a cultural framework for the information society based on the processes of globalization and computerization. During the era of information civilization, we can observe the functioning of the information society, and the quality of its functioning will determine the endpoints and starting points of "events" during the era of information civilization. In the area of our interest here, the relations between the concepts cover the circulation of information needed for particular types of public and individual decision-making, including legal decisions. At the same time, this determines the possibility of influencing the form and behaviours of the information society.

2. Questions of a general nature

The synthetic presentation of the titular issue requires several preliminary remarks that shed light on the research. For the purposes of the scientific study proposed here, a method based on logical and linguistic analysis is adopted. The basis is provided by

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5 A.P. Wierzbicki, *Teoria i praktyka wspomagania decyzji* [The Theory and Practice of Decision Support], Wydawnictwo Uniwersytetu Warszawskiego, Warszawa 2018, p. 11.

6 See: *ibidem*, pp. 13–14; The author carries out a conceptual analysis of the term *Information Civilisation* using the studies of dozens of authors, e.g. Toffler, Braudel, Rawls or Masuda. *Ibidem*, pp. 10–29.

7 The definition of information society is a consequence of adopting Niklas Luhmann's concept of social system. N. Luhmann, *Systemy społeczne* [Social Systems], Zakład Wydawniczy "Nomos", Kraków 2012, *passim;* especially p. 165 *et seq*.

8 While proposing my understanding of the term information society in this article, I do not deny the correctness of the definitions put forward by others. Adopting such understanding allows us to capture the dynamics of reality, which makes the concept that is useful in the context of placing information society within the scope of the research field a variable rather than a constant. See other definitions: M. Golonka, *Czym jest społeczeństwo informacyjne?* [What is the Information Society?], "Ruch Prawniczy, Ekonomiczny i Socjologiczny" 2005, issue 4, pp. 253–265; F. Webster, *Theories of the Information Society*, 3rd ed., Routledge, London – New York 2006, pp. 8–31.

scientific publications in the field of legal sciences, but not only.[9] In my research work, I have the opportunity to draw on the terminological apparatus developed largely in connection with the *psychological theory of law* [Polish: *psychologiczna teoria prawa*] by Leon Petrażycki, adapted to the needs of the Jerzy Lande's a*nalytical theory of legal norm* [Polish: *analityczna teoria normy prawnej*].[10] In particular, I use the terms "right" and "obligation", which are understood in a direct and functional way; they allow capturing the interrelationships in the information society and define the relationship between normative regulations and the social environment. Substantive and formal sources of law were used for the research, applying the *triad of carriers of the content of normative legal regulations (general language – legal language – language of legal practice)*.[11] As a factor to balance logical reasoning, the concept of emotion is used, but not in the context of Petrażycki's assumption, but taking into account contemporary research.[12] One of the main theories underlying the research is also Jerzy Kozielecki's *psychological theory of decision* and theories of legal interpretation in Poland, from the *semantic intentional* legal interpretation to operational *validation-derivation* interpretation.[13] The above-mentioned items are considered as obligatory tools in the toolbox. To contextualize the findings, past research results are compared with those obtained today.

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[9] P. Kłos, *The decision-making approach in the mediation process*, "Studia Iuridicia Lublinensia" 2023, vol. 32, no. 4: *Special Issue: New Challenges to Justice: the Application of Law and ADR in the Perspective of Information Society*, pp. 47–70.

[10] E. Lisanyuk, *Leon Petrażycki on Norms and Their Logical Study*, "Studia Humana" 2018, vol. 7(4), pp. 30–38; J. Lande, *Nauka o normie prawnej* [The Science of Legal Norms], "Annales. Uniwersytet im. Marii Curie-Skłodowskiej" 1956, vol. 3, *passim*; J. Lande, *Nauka o normie prawnej* [The Science of Legal Norms], in: *idem*, *Studia z filozofii prawa* [Studies in Philosophy of Law], Państwowe Wydawnictwo Naukowe, Warszawa 1959, pp. 595–615, 913 *et seq*.

[11] P. Kłos, *Poufność mediacji*…, p. 15.

[12] K. Imbir, *Odmienność emocji automatycznych i refleksyjnych: poszukiwanie zróżnicowania neurobiologicznego i psychologicznego* [Distinctiveness of Automatic vs. Reflective Emotions: Their Neurobiological and Psychological Correlates]. Interdyscyplinarna rozprawa doktorska w ramach Międzywydziałowych Indywidualnych Studiów Matematyczno-Przyrodniczych Uniwersytetu Warszawskiego w zakresie Psychologii Emocji i Motywacji, Warszawa 2012, https://depotuw.ceon.pl (accessed: 30.10.2023); see also the comprehensive description of emotional intelligence: D. Goleman, *Emotional intelligence. Why it can matter more than IQ*, Bloomsbury Publishing Plc. 2009, https://donainfo.wordpress.com/wp-content/uploads/2017/09/emotional-intelligence-daniel-goleman.pdf (accessed: 25.02.2025).

[13] J. Kozielecki, *Psychologiczna teoria decyzji* [A Psychological Theory of Decisions], Państwowe Wydawnictwo Naukowe, Warszawa 1977, pp. 9–69, 247–264; M. Zieliński, O. Bogucki, A. Choduń, *et al*., *Zintegrowanie polskich koncepcji wykładni prawa* [Integration of Polish Conceptions of Interpretation of Law], "Ruch Prawniczy, Ekonomiczny i Socjologiczny" 2009, issue 4, pp. 23–39; A. Korybski, L. Leszczyński, *Stanowienie i stosowanie prawa. Elementy teorii* [Enacting and Applying Laws. Elements of Theory], 2nd ed., Wolters Kluwer, Warszawa 2021, pp. 231–248.

3. Information

The correctness of the message being created and transmitted should be assessed in accordance with the rules of communication sciences, logic, and the context that accompanies its production. The scope of research embedded in the research field relates to information and, indirectly, to the entity generating the information. What matters the most is the method of providing information and the speed of transmission. Within the gradation of importance, the content of information will be located in third place, and the quality of the content and its reception conditions allow the hypothesis that the information provided will be a building block of post-truth and its "understanding" becomes fundamental.[14]

Information is a product of the *psyche* that is realized in the interpersonal relationships of society members.[15] Information determines our behaviour directly or indirectly.[16] It is an abstract concept, although to operate, it needs a material medium such as the receiver, the transmitter, and the space in which information is stored. A process leading to the identification of information is communication. In this study, I focus not so much on the syntactic and pragmatic content of information, but on the function that information fulfils when it circulates.[17] By theoretically separating information from the entity that creates information, we can perceive this information as an abstract building block of the concept proposed below. Theories aimed at perceiving reality through the prism of information already exist in science.[18]

The central point of this research is information of legal relevance. Its importance can be identified by changes in the information society, and only such information is in the field of interest. The possibility to observe a change in the functioning of the

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[14] See: J. Jabłońska-Bonca, K. Zeidler, *Prawnik a sztuka retoryki*…, pp. 26–28; P. Kłos, *Cywilizacja informacyjna a prawo – preliminaria* [Information Civilization and the Law – Preliminaries], in: *Horyzonty informacji 5* [Information Horizons 5], ed. P. Korycińska, Uniwersytet Jagielloński, Kraków 2023.

[15] Legal norms are intersubjectivized in the forms of right and obligation. In the culture of positive law, intersubjectivization is linked to the thetical justification of the validity of law.

[16] Any decision-making is not only the result of the information we obtain from the outside on a given issue. Also important is the collection of our experiences, or ultimately the way we make decisions, which itself can be understood as the flow of information in the nervous system, and the structure of the nervous system is also encoded in DNA, the carrier of information.

[17] Syntactic content is the amount of information in the context of the data it contains (the intensity of the message). Pragmatic content serves the possibility of qualitative use, i.e. it is about the essential content contained in the information. See: *Informacja*: https://encyklopedia.pwn.pl/haslo/informacja;3914686.html (accessed: 11.11.2023); see also: D.M. Mark, *Geographic Information Science: Defining the Field*, in: *Foundations of Geographic Information Science*, eds. M. Duckham, M.F. Goodchild, M. Worboys, Taylor & Francis e-Libery, London – New York 2005; A.U. Frank, *Pragmatic Information Content – How to Measure the Information in a Route Description*, in: *Foundations of Geographic Information*…, pp. 1–17, 47–70.

[18] See the genes, memes and tremes theory by Susan Blackmore. In my understanding, replicating information is a function inherent in nature, and we can define it on the basis of the rule of sense. See: S. Blackmore, *Tremes – the 3rd replicator*, https://www.susanblackmore.uk/tremes-the-third-replicator/ (accessed: 22.10.2023).

information society will mean that a piece of information emerged that could have caused such a change. The information we have is essential in the context of the choice of action or omission of conventional activities we carry out. In many respects, conventional activities are combined with legally determined behaviours, because law surrounds us and performs a regulatory function, more and more extensively.[19]

To some degree, we can consider information as knowledge. Nowadays, gathering knowledge is easier than ever. Millions of terabytes of information is stored on a huge number of servers globally. To a large extent, we can attribute cognitive and practical value to this information, so we can treat it as knowledge.[20] This knowledge is subject to theoretical reflection, which means it is generalized in order to be applied to a real-life situation.

4. Information civilization and information society – the communication perspective

In this section I briefly present the results of another study, in which I discuss the concept of *information civilization era* and the concept of *information society* operating within the scope of the former. In a scientific publication titled *Information civilization and the law – preliminaries*[21] I made a preliminary characterization of the issue and identified the characteristics of the information society, i.e., its dynamism and changeability. It has been pointed out that its existence results from the functioning of a worldwide information network. The hypothesis of an "increasingly accelerated temporal-spatial relationship", combined with an accelerated ageing of competences, seems to be relevant.[22] The current model in theoretical terms is the primacy of information, with accumulated information/knowledge being stored on electronic storage media, and growing widespread and unrestricted access to it. As stated by Frank Webster, defining information society is undoubtedly a very difficult challenge, but our intuitive thinking and understanding of the concept leads us to correct conclusions.[23] I have focused in

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[19] See the legal and regulatory area of the EU, governing increasingly detailed aspects of social life.

[20] B. Stefanowicz, *Wiedza: wybrane aspekty* [Knowledge: Selected Aspects], "Współczesne Problemy Zarządzania. Zeszyty Naukowe Wydziału Informatycznych Technik Zarządzania Wyższej Szkoły Informatyki Stosowanej i Zarządzania" 2019, no. 1, pp. 7–56.

[21] P. Kłos, *Cywilizacja informacyjna*…

[22] *Ibidem*, pp. 27 ff.; J. Lamri, *Kompetencje XXI wieku. Kreatywność, komunikacja, krytyczne myślenie, kooperacja* [The 21st Century Skills: How Soft Skills Can Make the Difference in the Digital Era], transl. A. Zręda, Wolters Kluwer, Warszawa 2021, *passim*. With special emphasis on chapter *Posłowie. Nowe kompetencje w służbie czwartej rewolucji przemysłowej* [Afterword. New Skills in the Service of the Fourth Industrial Revolution] (pp. 199–202).

[23] F. Webster, *Theories of the Information*…, p. 21. The term information society originated in Japan and its etymology points to the link with the technological development in the information industry. See: A. Molesztak, A. Pawiak, *Information society and the necessary digital skills*, in: *IT Tools – Good Practice of*

my research on information and the relationship of information to reality, i.e., a dynamic system distinguished theoretically.

When looking for a theory that may capture information society within a theoretical framework, I found Niklas Luhman's systems theory.[24] The author of systems theory has described it as a super-theory and has himself acknowledged that it is "maturing", although I find the word "evolving" more appropriate.[25] It is not easy to understand what Niklas Luhman wrote, but even a brief look on the foundations of the theory already provides the opportunity to put the theoretical constructs into a methodological perspective.[26]

The information society should be examined at a given moment, without focusing on its past and the reasons for its operation. It is undoubtedly difficult to define the subject-related sphere or the territorial framework of any society. An attempt to describe the information society in a static manner does not seem to capture the nature of the problem. The fundamental question is how we can observe the existence of the information society. We are helped here by Luhmann, who recognizes the possibility of seeing the system only by noticing the difference.[27] Just as we discover new stars and planets from hardly visible changes in reality, we discover the existence of the information society from similar clues. The question about the elements between which the relationship takes place becomes obvious. One can say, using Luhmann's perspective, that it is the environment and the system. Neither of them is a static object. I perceive the information society as a system. Due to a reasonable relationship of influence, concepts from the theory of social systems are most fitting to describe the information society, and I draw on most of them.

Although the possibility of observing the social system is hindered by the observer's participation in it, detection of the information society (system) is possible on the basis of changes in information loads, in messages, and in the form of communication activity.[28]

Effective Use in Education, ed. E. Smyrnova-Trybulska, Studio Noa for University of Silesia, Katowice – Cieszyn 2015, pp. 201–210.

[24] N. Luhmann, *Systemy społeczne*…, *passim*. Luhmann defined information as a difference that arises out of communicating. This made me adopt the term "information society" instead of "communication society". *Ibidem*, pp. 81–82.

[25] *Ibidem*, pp. 12–13.

[26] In Polish legal theory and sociology of law, Niklas Luhmann's theory was subject to study by Jan Winczorek. See: J. Winczorek, *Systems Theory and Puzzles of Legal Culture*, "Archiwum Filozofii Prawa i Filozofii Społecznej" 2012, no. 1, pp. 106–125; J. Winczorek, *Zniknięcie dwunastego wielbłąda. O socjologicznej teorii prawa Niklasa Luhmanna* [The Disappearance of the Twelfth Camel. On Niklas Luhmann's Sociological Theory of Law], Liber, Warszawa 2021, *passim*. At the same time, it is worth noting that the very term "understanding" as used by Luhmann is an essential element of the communication process that ensures its continuity. N. Luhmann, *Systemy społeczne*…, p. 84.

[27] Luhmann's theory amounts to noticing a change, it is not an attempt to capture the reality. J. Winczorek, *Zniknięcie dwunastego wielbłąda*…, p. 29.

[28] N. Luhmann, *Systemy społeczne*…, pp. 81, 166 *et seq*.

Trying to grasp the concept of "environment" after Luhmann, we can say that the environment is everything that is not the system.[29]

The information society and the environment have no fixed elements. Everything is fluid and changeable. It can be said that it is a social structure in functional terms, as defined by August Comte and Herbert Spencer, but with the adoption of a redefinition of mutual and dependent parts, with a clear indication that the information society is a system in relation to the environment.[30] The information load transmitted within the system and the environment, will be either constitutive or declarative. We can speak of a constitutive load when the change created by the movement of information leads to changes in the system itself. The declarative level is when the change does not lead to a change in the system, but may cause temporary fluctuations in it. An example of information with a constitutive load is a piece of news about Israel's attack on the Gaza Strip, or about the war in Ukraine, or the enactment of the Artificial Intelligence Act.[31] An example of a declarative load is any information that does not cause changes in the system, but only possibly just temporary fluctuations, such as most news posted on social media.

What is useful in Luhmann's theory is the interrelationship of the system and the environment, which is constitutive, because it indicates the identity of the system. It is impossible to identify the information society without a relationship with the environment. The constant, though of varying intensity, flow of information is a demonstration of the functioning of the relationship and at the same time a necessary condition for the existence of the system. Without a focus on the relationship involving the flow of information, we are unable to see the information society. The centres that send and receive information are irrelevant, because they too are all the time subject to change: let us look at the permanence of institutions, power, the interchangeability of human beings and artificial creations. The essence of the information society is communication. Its functioning provides the possibility of having relations with the environment.[32] Thus, speaking of the information society as a dynamic structure, we can say that early days of the information society occurred at a time of limited communication capacity, and the proper era is now as a result of increased communication capacity through the Internet. Like Luhmann, I treat the phenomenon of communication in

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[29] According to Luhmann, the components of social systems are communication and the activities related to it. *Ibidem*, p. 164.

[30] Integrated educational platform of the Ministry of Education and Science. See the entry: *Struktura społeczna*, https://zpe.gov.pl/a/przeczytaj/DAZAACg9J (accessed: 11.11.2023).

[31] Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain union legislative acts, COM/2021/206 final.

[32] I disregard Luhmann's concepts such as "meaning", "the course of processes determined by the difference", "self-organization of processes" and information, i.e., "event that selects system states". The legitimacy of introducing such terms for the presentation of assumptions goes beyond the needs of the present article. See: N. Luhmann, *Systemy społeczne*…, p. 62 *et seq*. I do not consider the construction of the system as a whole either, *ibidem*, p. 14.

terms of a process determining a sequence of events that we can observe. If we treat the system as interactions and the information society as a system, then the flow of information will be an interaction that allows us to define this society.

The information society is formed in a manner that is hardly noticeable.[33] At the moment, we can see its manifestations through information activity by means of electronic communication. Trying to capture the process of its formation, we should pay attention to information produced by supranational centres, such as the European Union, NATO or transnational economic operators, which are characterized by an increase in the importance of internal law over generally applicable state law. It is also important to harmonize the law in different entities that are independent of one another. Examples include regulations on the right to information or sustainable development. However, understanding the functioning and dynamic form of the information society is characterized by a considerable dose of abstraction. Moreover, it is difficult to define something that constantly changes and only the rules that accompany it remain stable. Standard cognitive instruments are not useful here, and a theoretical description of the phenomenon is helpful. The noticing of the information society in the proposed structure requires reconceptualizing terminology and capturing the relationships between the concepts. The most important thing is to focus on "differences", elements not visible to the naked eye but noticeable using abstract descriptions.

It seems that the problem of the information society is that it is too complicated and the system automatically reduces this complexity for the needs of its own existence. Such an approach would challenge the understanding of the information society as an overarching system. However, there is another entity that is not limited in terms of perception and learning, and therefore does not need to be reduced in order to understand the system. Wide-ranging operational capabilities are unattainable for humans, but too much complexity may not seem to be a problem for artificial intelligence.

5. Human vs. the Internet vs. comprehension vs. AI

Now a few comments on the entities, although, as I have already mentioned, I will not dwell on them. In the communication process, human cognitive potential is a weak point. We are limited by our biological efficiency, which translates into neurological and psychological determinants. It turns out that our understanding usually reflects the reality, but not necessarily. We see an imperfect picture of reality and only intersubjectivity can in a way remedy a strictly subjective understanding of information.[34]

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[33] Information society is autopoietic. See: J. Winczorek, *Zniknięcie dwunastego wielbłąda*…, pp. 25, 52–60.

[34] Thee the information on the website of Wu Tsai Neurosciences Institute, Stanford University. Vox, *"Reality" is constructed by your brain. Here's what that means, and why it matters*, 22.06.2020, https://neuroscience.stanford.edu/news/reality-constructed-your-brain-here-s-what-means-and-why-it-matters (accessed: 2.11.2023); see also the concept of comprehension in: P. Kłos, *Cywilizacja informacyjna*…

The very understanding of information can be affected by a neurological or psychological error. Our memory also does not operate by arranging bits of information but actively processes the stored content and there may be phenomena associated with distorting what we saw with our own eyes or supplementing the missing information.[35] Another issue is the rate of human learning and the limitations associated with the amount of human memory available. I consider it correct to accept the thesis that the human mind is incapable of self-reflection and that societal phenomena are too complex for their analysis to yield meaningful results.[36] The problem is complicated by the dynamics of events. A human no longer functions as a strictly biological entity and has been integrated into the computerized decision-support systems. Transferring long-term memory outside the brain memory areas and expanding operating memory make us techno-human.[37] This is related to an ongoing evolutionary process, characterized especially by rapid change.[38] With the advent of the era of the information society, an individual not assisted by computers will not be able to manage the reality.[39] An example where we encounter information overload is the Internet. The global information network is now a normal and essential element for us to operate within.[40] As humans, we are unable to cope with the masses of information that cross the network every second. However, the assumption of reduction adopted by Luhmann ceases to apply if an organism appears that can control the system and make self-observations combined with understanding.[41] Such an organism can be artificial intelligence combined with human brains. It is an organism that can overcome the

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[35] See: I. Kurcz, *Pamięć, uczenie się, język* [Memory, Learning, Language], Wydawnictwo Naukowe PWN, Warszawa 1985, pp. 79–83; E.F. Loftus, *Fabrykowanie wspomnień* [Making up Memories], "Świat Nauki", November 1987, no. 11, pp. 52–57; A. Piotrowska, *Rzekome wspomnienia – czy ufać swojej pamięci?* [Ostensible Memories. Should We Trust Our Memory?], in: *Pamięć. Zjawiska zwykłe i niezwykłe* [Memory. Ordinary and Extraordinary Phenomena], ed. E. Czerniawska, Wydawnictwa Szkolne i Pedagogiczne, Warszawa 2005, pp. 125–144; A. Memon, A. Vrij, R. Bull, *Prawo i psychologia. Wiarygodność zeznań i materiału dowodowego* [Psychology and Law: Truthfulness, Accuracy and Credibility], transl. J. Radzicki, Gdańskie Wydawnictwo Psychologiczne, Gdańsk 2003, pp. 209–230.

[36] J. Winczorek, *Zniknięcie dwunastego wielbłąda*…, pp. 12–13. On the possibility of overcoming the limits of one's cognition, see also: *Dunning-Kruger Effect*, Psychology Today, https://www.psychologytoday.com/us/basics/dunning-kruger-effect (accessed: 7.12.2023).

[37] D.L. Schacter, *Media, Technology, and the Sins of Memory*, "Mem Mind Media", 2.07.2021, https://doi.org/10.1017/mem.2021.3 (accessed: 25.11.2024); G. Szumera, *Człowiek a współczesne technologie informacyjne* [Man and Modern Information Technologies], "Zeszyty Naukowe Politechniki Śląskiej, Seria: Organizacja i Zarządzanie" 2016, issue 95, pp. 516–527; D.L. Schacter, D.R. Addis, D. Hassabis, *et al*., *The Future of Memory: Remembering, Imagining, and the Brain*, "Neuron Review" 2012, vol. 76, issue 4, pp. 677–694.

[38] A human has the ability to adapt to changing external circumstances owing to the frontal lobe of the brain. J. Lamri, *Kompetencje XXI wieku*…, pp. 38–39.

[39] In more detail see: P. Kłos, *Cywilizacja informacyjna*…

[40] We can perceive information as one of the driving forces of civilization. See: J. Lamri, *Kompetencje XXI wieku*…, pp. 46 *et seq*.

[41] See the fundamental aspect of Luhmann's theory: the "double contingency" theorem. J. Winczorek, *Zniknięcie dwunastego wielbłąda*…, p. 74; see also: R. Vanderstraeten, *Parsons, Luhmann and the Theorem of Double Contingency*, "Journal of Classical Sociology" 2002, vol. 2(1), pp. 77–92.

barrier of excessive complexity.[42] Undoubtedly, such an organism could be the information society's self-control mechanism, influencing the process of message transmission, both in terms of the process and the substantive quality of information. This assumption is of a philosophical nature, but from the observation of research conducted in various sciences it seems more and more realistic to implement.[43] Observations of the scientific progress in research on artificial intelligence lead to the conclusion that as humans (individuals) we are unable to control and supervise the multitude of processes that take place on the Earth. We must remember that information is the primary component of any system. The ordering of information does not have to be performed by an entity having the human-cyborg form, and any deeper integration with artificial organisms does not necessarily mean a loss of individualism and can be implemented using non-invasive methods. I also recognize understanding as a meta-principle in the information society.[44] We should consider whether, as part of the current development of technology, we should extend the concept of *psyche* to elements that can also exist outside the human individual, recognizing the possibility of phenomena such as emotions, intellect or cognitive processes also in artificial organisms. Co-evolution is not only about the mental and social system, as Luhman assumed, but also includes cyber-organisms. This situation requires continuous monitoring of scientific findings to prevent negative consequences associated with the integration of humans and artificial organisms.

6. Law

It is possible to leave the information society to develop in an evolutionary way and assume the role of an internal observer without any interference whatsoever. Leaving the information society to itself deprives us of any influence on the directions of change, and it seems that due to the level of civilizational development we should at least try to shape the future. In view of the dynamic changes emerging with the functioning of the information society, we must make use of a tool we have in place, namely law.[45] The concept of society presented earlier affects directly the way we see and treat law. It directs us to see law as a function, but in two forms.

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[42] This issue is not yet scientifically studied in detail but there is already research that can explain at least the basic possibilities in terms of understanding. See: R. Martone, *Scientists Demonstrate Direct Brain-to-Brain Communication in Humans*, "Scientific American Mind" 2020, vol. 31, issue 1, https://doi.org/10.1038/scientificamericanmind0120-7 (accessed: 12.11.2023); and a non-scientific publication, which can still be treated as a source of inspiration: Ch. Woodford, *The Internet and the Brain*, 1.05.2023, https://www.explainthatstuff.com/internet-and-brain.html (accessed: 12.11.2023).

[43] See also the concept of social collective intelligence. J. Lamri, *Kompetencje XXI wieku*…, pp. 180 *et seq*.

[44] In more detail, see P. Kłos, *Cywilizacja informacyjna*…

[45] See the phenomenon of sociologization of law. J. Winczorek, *Zniknięcie dwunastego wielbłąda*…, pp. 126–127.

The first form is when we treat law as a relationship between two elements perceived in the proposed solution. Here we will understand the function of law as the relationship between the information society and its environment.[46] In this area, we will see law as a stabilizing and controlling element that ensures the unwavering existence of communication and the correct flow of information. In the second form, we treat law as norms governing communication processes, and the emphasis is placed on prospectiveness. It also performs a coordinating function, affecting the information society and its environment.[47] Thus, law determines the directions and rates of the flow of information and it can fulfil such a function due to its obligation-setting nature.[48] In both cases, law ensures the correct replication of information to avoid disruption and ensure streamlined transfer in further communication processes.[49] Therefore, I do not refer to norms in terms of their content. Instead, I see law only in its functional character producing incidental or planned consequences. I consider including Petrażycki's concept of the psychological origin of law as the first material from which to build legal norms.[50] This solves the problem of their origin.[51] The initiation of the norm as an emotion occurs in the psychological experience, then law is initiated in the process of intersubjectivization. The lawmaking process is seen in the exchanged messages, so it becomes vital that a given law is understood by all the individuals and entities it will affect.[52] Law either simplifies or complicates the content of the messages. The more complex the structure of the information society is, the more simplified and common the form of communication concerning law should be.

Credit must be given to Luhmann for including law in his concept, not as part of state systems but as a subsystem of the global system inherent in all humanity. Following him, I assume that we should not compare law at the meta level with international law. It is rather the legal orders of the European Union or NATO that are closer to such an understanding of law.[53] Luhmann did not take into account the possibility of the lack of reduction for the understanding of law in global terms, so he did not assume

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[46] The concept of law will depend on the relationship constituted by law. See: I. Bogucka, *Funkcje prawa. Analiza pojęciowa* [The Functions of Law. A Conceptual Analysis], Kantor Wydawniczy Zakamycze, Kraków 2000, pp. 11–26.

[47] See the concept of generalized media. J. Winczorek, *Zniknięcie dwunastego wielbłąda*…, p. 115.

[48] Zob. I. Bogucka, *Funkcje prawa*…, pp. 27 *et seq*. It may also perform the function of a "communication selection" mechanism. J. Winczorek, *Zniknięcie dwunastego wielbłąda*…, p. 224.

[49] An initial concept of information supervision organization, taking into account not only the function but also the content. In more detail see: P. Kłos, *Cywilizacja informacyjna*…

[50] E. Lisanyuk, *Leon Petrażycki*…, pp. 31–33; J. Lande, *Studia z filozofii*…, pp. 14–21, 54–55, 913–914.

[51] I am aware that such an approach is far from tenets of phenomenology. That is why this issue is still under consideration.

[52] The mental process involves a human, but in the era of the development of decision support systems, and in particular artificial intelligence, we can think about redefining some concepts.

[53] J. Winczorek, *Zniknięcie dwunastego wielbłada*…, p. 330.

a regulatory function in prospective terms.[54] I believe that law in the context of the information society is currently an element indifferent to law at the state level.[55] The reasons include lack of competent decision-making centres and the fact that information centres are located in an uncontrolled way. In other words, there is no system core that would enable top-down management. This does not exclude the possibility of realistically attaching more importance to information society-level communications than to state-level communications.[56]

I would like to draw attention to another phenomenon inherent in the communication about law in the information society, i.e., the growing importance of the virtual space. It is difficult to draw scientifically reliable conclusions about the level of legal changes that are currently visible mainly in state legal systems. One can form an opinion about the obvious things like about the growing importance of the virtual sphere, not only in the legal space, as a consequence of the COVID-19 pandemic. The effects are already observable (remote court hearings, concluding contracts electronically, online mediation). The world, just as Luhmann had predicted, is becoming more and more complex and interconnected at the same time. It is evident that virtual space will become the dominant medium for communication processes due to its accessibility, convenience, wide reach, and low cost. The fact that activities of legal relevance in the virtual space of the information society are quicker and easier complicates situations because it is also quicker and easier to break the law, and the liability rules are more complicated and time-consuming to create and enforce. Therefore, legal regulations in the information society are advisable even at the micro level, and these are indeed introduced by individual countries and supranational organizations. In order for such regulations to be adopted on a macro scale, typical of the information society as such, it is necessary to develop procedures on a global scale. Due to the possibility of participating in legal transactions being not only humans as biological individuals but also artificial creations, the procedures will have to be developed using a new code understandable to all participants.[57] They will have to be encoded using a system of signs understandable by all, assuming an approximation of understanding.[58]

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[54] Luhmann argued that one should not react to the phenomenon of centralization of law. *Ibidem*, pp. 332–333; Following J. Winczorek, I think that national legal systems are not abolished (either wholly or paritially) by building the supranational system. *Ibidem*, p. 334.

[55] Winczorek is of different opinion. *Ibidem*, p. 334.

[56] Luhman assumed this possibility not so much in the functional perception as in the adoption of a division into those who participate and those who do not participate in communication processes. See: *Ibidem*, pp. 335–336.

[57] Which is possible to work out, given the linguistic changes that are taking place across the world.

[58] Perhaps laws of the logic of language in ontological terms will be breached, but with positive effects on the theory of cognition.

7. Conclusions

I consider the functional view of the information society with the protection by law presented herein as a proposal.[59] The whole concept is influenced by the systems theory of Niklas Luhmann, who has developed it in a very detailed and comprehensive manner, enabling it to be successfully used as a methodological basis for conducting research. However, this is not the only theory mentioned in the presented proposal. The theories of legal interpretation and ADR as a concept, have also had a significant impact on it.

The information society is a dynamic creation that cannot be observed without adopting a specific method to identify its existence. The element that strengthens the dynamics is time and, more specifically, the relativity of its perception with a focus on acceleration. Information society is a creation independent of the world being perceived, it does not know borders or languages. Its functioning can be seen by detecting the differences between messages. It is interesting that with a creation thus understood we do not have to resort to the construction of an ontological basis, axiological assumptions, the concepts of good or evil, and we can only observe the functioning.

I propose that the information society be covered by the protection of law. I point to the stabilizing and controlling function, in relational terms, and the regulatory and coordinating function in terms of roles. The subject-matter of communication is information, and law should ensure its proper replication, which is necessary for the proper functioning of the information society.

It is clear that we experience a continuous growth of information and increasing complexity in the system. A proposal for solving the situation with such a high degree of complexity is to work on collective intelligence and the use of artificial intelligence. For single individuals, only a reduction of the information pool or, in other words, the "information ecology" can allow a selective understanding of elements of reality. The development of appropriate legal rules, the system of their verification and control to ensure proper functioning of the newly established information society is a great challenge of the 21st century. The currently occurring transnational, or even global, problems include climate change, economic crises and migration. Only legal solutions can contribute to normalizing and stabilizing social conditions on Earth and ensure sustainable development in many fields of our activity.

[59] My approach to the information society changes as I learn about the issues and the possibilities of conceptualizing them. It seems that this study is a transitional point in understanding the essence of information society and law. I assume that I will conduct extensive research on these issues after the completion of the study on decision-making processes in mediation.

Summary

Paweł Kłos

**Information Civilization and the Law:
Significance of Limiting Factors. Introductory Insights**

The article seeks to conceptualise the term "information society" and law as a limiting factor in its operation. Information society has no boundaries, no territory and may be conceptually captured using a functional view. At the same time, the author, as a legal scholar, sees possibilities for a normative response to changes in reality. This is a result of the obligation-setting nature of law, where we obtain a tool that allows us to manage and design new solutions, thus responding to action and shaping the future of the information society. In order to accurately identify the scientific problem, a closer external integration of the legal sciences is necessary, which can lead to reconstructing and discovering the interrelationships of the contemporary world.

Keywords: information civilization, information society, law, logic, communication

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