

Risk management in the digital constellation - a constitutional perspective (part I)*

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Abstract

The digital revolution is creating new risks, together with multiple opportunities for communication, commerce and political participation. What Ulrich Beck described as the world risk society and - from another perspective - Jürgen Habermas calls the "postnational constellation" is a challenge to our concepts of society and democracy. Digitisation is pushing this development towards a new dimension that allows us to speak of the "digital constellation". Social relations are denser across borders and continents; what happens there matters here, as if it were happening on our own doorstep. New kinds of risks are arising as a side-effect of the increasing use of information technologies, while the internet also offers - for the first time - an infrastructure that makes formerly unrealistic concepts of cosmopolitan democracy (David Held) a real option. This includes the establishment of a constitutional framework for normative processes aiming at, among other global challenges, effectively managing cyber-risks at national, supra-national and global levels in a coherent way. Multilevel Constitutionalism is proposed as a means of providing a normative theory for conceptualising the constitutional structure of a layered system of governance that ensures a maximum degree of self-determination for the individual and, thus, for the democratic legitimacy of decisions made at each level, from local to global. Thus, the constitution for democratically legitimate action at the global level does not question democracy at other levels, but should be complementary, based upon functioning states, and designed to deal with issues that are beyond their reach, including cyber-security.

Keywords

risk society, democracy, postnational constellation, digitization, cybersecurity, risk management, digital constellation, global citizen, multilevel constitutionalism, shared sovereignty, subsidiarity, multiple identities, global constitutionalism

Topic

Law, constitutional theory

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La gestión de riesgos en la constelación digital — una perspectiva constitucional (parte I)

Resumen

La revolución digital está creando nuevos riesgos y, a la vez, múltiples oportunidades para la comunicación, el comercio y la participación política. Lo que Ulrich Beck describió como la sociedad mundial del riesgo y –desde otra perspectiva– lo que Jürgen Habermas llama la «constelación postnacional» es un desafío a nuestros conceptos de sociedad y democracia. La digitalización está impulsando este desarrollo hacia una nueva dimensión que nos permite hablar de la «constelación digital». Las relaciones sociales son más densas a través de las fronteras y los continentes; lo que ocurre ahí importa como si ocurriera en nuestra propia puerta. Surgen nuevos tipos de riesgos como efecto secundario del uso creciente de las tecnologías de la información, mientras que Internet también ofrece – por primera vez – una infraestructura que hace de los conceptos hasta ahora poco realistas de democracia cosmopolita (David Held) una opción real. Esto incluye el establecimiento de un marco constitucional para los procesos normativos que trata, entre otros desafíos mundiales, de gestionar de manera coherente y eficaz los riesgos cibernéticos a nivel nacional, supranacional y mundial. El constitucionalismo a varios niveles se propone como un medio de aportar una teoría normativa para conceptualizar la estructura constitucional de un sistema de gobernanza en capas que garantice el máximo grado de autodeterminación del individuo y, por tanto, la legitimidad democrática de las decisiones tomadas en cada nivel, desde lo local hasta lo global. Por lo tanto, la constitución para una acción democráticamente legítima a nivel global no cuestiona la democracia en otros niveles, sino que debe ser complementaria, basada en estados que funcionen y diseñada para tratar temas que están fuera de su alcance, incluyendo la ciberseguridad.

Palabras clave

sociedad del riesgo, democracia, constelación postnacional, digitalización, ciberseguridad, gestión del riesgo, constelación digital, ciudadano global, constitucionalismo a varios niveles, soberanía compartida, subsidiariedad, identidades múltiples, constitucionalismo global

Tema

Derecho, teoría constitucional

Introduction

The digital revolution is a revolution affecting all our societies, one which is creating great opportunities and great risks. The result is an emerging digital society that differs from industrial society in many respects. Talking about risk management today necessarily involves explaining what the new risks in this digital society are before considering the tools and processes to deal with these risks, and this seems particularly interesting in a constitutional theory and law perspective.

Some preliminary general questions need to be answered nevertheless. First of all, we need to understand what we mean by the terms “risk” or “risk society”, and what the concept of “Digital Society” denotes. Secondly, managing

risks is about more than risk assessment, precaution, protection or defence, in particular in the digital age. This paper takes a broader view and discusses governance aspects, as well as political and, in particular, normative instruments with the aim of exploring a constitutional approach to the choice and implementation of appropriate strategies for cyber-risk management.

Here is my first proposition: As we talk about the new risks that are being created by digitisation, which, in turn, is creating a multitude of opportunities regarding governance at large, we have to deal with a new kind of risk in a new kind of “constellation”, to use a term coined by Jürgen Habermas. Developing his concept of “postnational constellation”,¹ the internet today is carrying us one step further to what I would call the “digital constellation”. This will be discussed in the first part of the present paper.

1. Habermas (2001, p. 58).

In the “digital constellation”, we are confronted with new risks and threats on a global level, regardless of borders and geographical distances. There are great opportunities too, offered by the internet for developing new concepts of governance that seem to be particularly relevant also for risk-management. As has been mentioned in earlier studies, digitisation has the particular potential to make democratic regulation possible at the global level and also to manage risks of the kind involved by the worldwide application of ICT.² In other words, the global dimension of the internet and, consequently, of the risks it entails for digital society at large is comparable to the global dimension of other great challenges like climate change, mass migration, nuclear power, genetic engineering or international terrorism. These risks are somehow inherent products of our society, and so are the cyber-risks.³ In order to manage them, instruments of the state and international cooperation in most cases will not suffice. Global solutions are necessary, and one such solution is global regulation - global cyber security regulation that is democratically decided and globally effective.

Here is my second proposition - perhaps still a bit utopian: establishing mechanisms of democratically legitimised regulation at the global level as part of a multilayer system of governance organised in accordance with “multilevel constitutionalism”. Some thoughts on this will be presented in Part II of this paper.

I. Risk Society and the Digital Constellation

There is a correlation between the problem as I see it and the solution I envisage: With the progressive use of the internet, the risk society has assumed a new character and proportions with new, so far unknown risks; this is the problem. On the other hand, modern information technologies and, in particular, the internet are opening up new possibilities for managing the risks we are facing; this is the solution. A first question is this: with regard to the risks that are accompanying the digital revolution, what kinds of risk exactly are making the risk society in the digital age different from the risk society of the kind

described by Ulrich Beck? It appears that the (world) risk society described by Ulrich Beck (*infra* 1) corresponds in many respects to the “postnational constellation” of Jürgen Habermas in that it faces the challenges of globalisation and is compelled by a need to rethink democracy (*infra* 2). However, an answer to the open question of how to organise democracy beyond the state at the global level seems to be possible as a result of the opportunities presented by the digital revolution only. Besides its concomitant new risks, therefore, digitisation is also fundamentally changing the conditions for political processes in such a way that it is fair to conceptualise the new situation as the “digital constellation” (*infra* 3). Thus, with the internet it seems to be possible to develop an answer. And yet only the new risks and opportunities presented by digitisation and the internet seem to compel us - but also allow us - to conceptualise and establish a system of democratic norm-setting as required under the new circumstances (*infra* 4).

1. Risk Society and World Risk Society (Ulrich Beck)

We owe the term “risk society” to Ulrich Beck’s works on the society of the 1980s, which presented new risks of a kind and magnitude hitherto unknown and equally affecting all members of society.⁴ In contrast to the industrial society described by Marx and Weber, the question is not how best to utilise nature, to release men from traditional constraints and to produce and redistribute wealth in a society of inequalities. The risk society has to deal with problems arising from socio-economic development, the risks produced by industrialisation and new technologies: nuclear accidents, genetic engineering, climate change, air pollution and the dying forests, to name but a few. These risks are man-made, and they are transnational, in part global.⁵ This is why Beck extended his concept of risk society to “World Risk Society”.⁶ The risks are unintended and “implicit” side-effects of industrialisation, “risks of modernisation”; they are universal and affect the poor as much as the rich, they are “self-referential”, unpredictable and difficult to attribute to particular individuals.⁷ And they produce inequalities at all levels, including the

2. Pernice (2016, pp. 151-206; 2017, pp. 27-52; forthcoming).

3. See already Pernice (2017, note 2, p. 5).

4. Beck (1986, pp. 17-18, 25-30, 48, 52-58).

5. *Ibid.*, p. 26.

6. Beck (1999, 2008) and particularly pp. 40-42, where he emphasises the “cosmopolitan momentum” of the world risk society; and Beck (2009, pp. 3-22).

7. *Ibid.*, pp. 29-30, 36, 42-43.

international one.⁸ Ulrich Beck distinguishes these risks from *personal* risks, such as those taken by Columbus when discovering new continents and having the connotation of adventure and courage. Instead, the new risks are general, they have the potential to cause mankind to destroy itself.⁹ Also, “external” risks like natural disasters or pandemics, unforeseeable and unattributable to anyone as they are, are not the kind of risks that Beck is referring to in his concept of risk society.¹⁰

Cyber-risks are of a different kind as well. They can be very explicit, concrete and visible. Cyber-threats, as experienced, affect individuals, business, public services and authorities, critical infrastructures, energy grids, nuclear plants, and whatever is connected to the internet¹¹ or depends on its operation. These threats are not unintended, general and implicit but intended and focused. Cyber-risks can have a global dimension, like the risks Ulrich Beck is concerned with. Cyber-threats, however, are not from diffuse sources, as in the case of air pollution or dying forests, but always arise from a well-determined source, often individuals, but also from groups, businesses or states. As attribution is not technically possible; for the potential victims they give the appearance of natural disasters. However, they are not “external” to the society, but “internal”. They are “risks of modernisation” like the risks described by Ulrich Beck. In contrast to those, however, they arise from intentional planned attacks on IT systems, starting with smartphones and individual computers up to critical infrastructures. In this respect, cyber-risks are distinct from risks qualified as unintended side-effects, if they are not the unintended side-effects of digitisation at large.

Interestingly, in his book on the “World Risk Society”, Beck places particular emphasis on the global dimension of the new risks: “they destroy national borders and mix the domestic with the foreign”.¹² With regard to the environment, he observes a de-coupling of the social

location of the responsible decision-maker from the place and time where foreign people become the object of the physical and social injury the decisions cause.¹³ The complexity of the interaction and accumulation of disorders and destructions, he concludes, are challenging the survival of the planet itself, while international risk management is becoming progressively necessary and influential.¹⁴ Cyber-risks may not be challenging the survival of the planet, but they do stretch across borders and continents because of the global reach of the internet itself.

With regard to civil society, Beck detects approaches supporting a “world-risk-civic right”. In a new social theory, he states, society must be de-coupled from the state. What he strives to sketch out is a historico-empirical social theory of the world-risk-society.¹⁵ Beck also takes a cosmopolitan view of sociology, based upon the insight that reality is no longer national or international, but borderless and global: decision-makers have to take account of the people their decisions potentially affect, wherever they are in the world.¹⁶ He shares the call made by David Held for the establishment of institutions for global coordination, while emphasising that, prior to institutionalisation, global norms are emerging merely from the general indignation felt about facts that are considered to be simply unacceptable: norms, he says, do not only emerge “positively” from legislative processes but also “negatively” from an evaluation of crisis and threats.¹⁷ But he goes one step further. The ethical principle of hospitality in the sense meant by Immanuel Kant, who regarded the duty to welcome strangers as a key feature of his normative cosmopolitanism, for Beck would not be applicable in what he calls “the global space or responsibility of global risks”.¹⁸ The category of hospitality would not be “appropriate to expressing the inescapability of moral proximity over geographical distance”. For Beck, the global risks trigger a kind of

8. Ibid., pp. 54-58.

9. Ibid., p. 28.

10. Ibid., p. 300, where he emphasises that an essential characteristic of the risk society is the fact that we cannot make external factors accountable for the risk situations (“Unmöglichkeit externer Zurechenbarkeit von Gefahrenlagen”).

11. Stuxnet is said to be a case where the attack was possible even when there was no connection to the internet, see: Kushner (2013).

12. Beck (1999, note 6, p. 40), mentioning the “cosmopolitical moment” as an indication for a “meta-change” of the society of the 21st century: *ibid.*, p. 41 (my translation). See also *ibid.*, pp. 287-91.

13. *Ibid.*, p. 288.

14. *Ibid.*, p. 288-89.

15. *Ibid.*, p. 291.

16. *Ibid.*, p. 322-23. For his understanding of the term “cosmopolitan” see also *ibid.*, p. 314.

17. *Ibid.*, p. 326.

18. *Ibid.*, p. 339-40; in English: Ulrich Beck, *Critical Theory of World Risk Society: A Cosmopolitan Vision*, in: *16 Constellations* (2009, p. 5).

“compulsory cosmopolitanism” instead, “in a world whose boundaries are as porous as Swiss cheese, at least as regards communication and economics”.¹⁹ The global risks create a “globalised neighbourhood” among people worldwide, though unequally because of the different vulnerabilities in different regions of the world. “In legal terms” he says, “the ethical principle of recognition involves a kind of *cosmopolitan law of global risk*”. It is “the ‘living side effects’ of the risk decisions of others”, in his view, that create the right to have a say in these decisions.²⁰ These are the external effects of national policies in an interconnected world, and many of the global risks analysed by Beck are the result. This leads to the normative claim:

Global risks produce harms that transcend national borders. Thus the cosmopolitan law of risk is possible only if the boundaries of moral and political communities can be redefined so that the others, strangers and outsiders, are included in the key decisions which jeopardise and violate their existence and dignity.²¹

Consequently, for him, the future of politics is cooperation: “no nation can master its problems alone”. Beck calls this “an insight of political realism”, and he qualifies it as the “fundamental law of cosmopolitan Real politik”.²² As will be shown below, all this applies to cyber-risks, the management of which requires more than cooperation.

2. The Postnational Constellation (Jürgen Habermas)

Beck’s analysis, after all, draws attention to important aspects of globalisation. The risks include environmental, economic and terrorist risks. They are distinct from each other, and each of them requires different responses.²³ He insists, however, that they have two key features in common: “First, they all promote or dictate a policy of proactive countermeasures that annuls the basis of the

existing forms and alliances of international politics, necessitates corresponding redefinitions and reforms and calls forth new political philosophies”. Second, they cannot be understood as “external”, but are “the risks of civilisation”, as Beck says, that “may give rise to a more acute global normative awareness, create a public space and perhaps even a cosmopolitan outlook”.²⁴

a. Democracy theory revisited

At this point, though from a different perspective, the analysis corresponds not only to the cosmopolitan approach of David Held but also to the “postnational constellation” of Jürgen Habermas. Habermas, too, paves the way towards a revisited and extended approach to democracy as a democratic necessity.²⁵ His concept not only offers an opening-up of democracy theory,²⁶ but also indicates a number of fundamental points for democratic risk management at the global level. In contrast to the “historical constellation” that has existed since Rousseau and Kant, in which the democratic process assumed the more or less convincing institutional form of the territorial state or the nation, faced with the effects of globalisation,²⁷ Habermas looks for “appropriate forms for the democratic process to take *beyond* the nation-state”. There is what he calls a “paradoxical situation”, described as follows:

The idea that one part of a democratic society is capable of a reflexive intervention into society as a whole has, until now, been realised only in the context of nation-states. Today, developments summarised under the term ‘globalization’ have put this entire constellation into question.²⁸

Democracy organised within nation-states is limited to the borders of each state: The state is regarded as the home of sovereignty. The self-determination of the “sovereign” people cannot reach beyond these borders, except for international cooperation or war. The former is ineffective, the latter unacceptable. Though the external effects of national politics have always existed in history,

19. Ibid., p. 4.

20. Ibid., p. 6.

21. Loc. cit.

22. Ibid., p. 18.

23. Ibid., p. 13-15.

24. Ibid., p. 15.

25. Habermas (2001, note 1, pp. 58-112).

26. For the construction of democracy beyond the state see already Pernice (1999, pp. 703-9); see also, with a comprehensive analysis, Peters (2001, pp. 93-166).

27. Ibid., p. 60.

28. Ibid., p. 60-61.

the world has changed with the progress of globalisation. With a reference to Claus Offe David Held stated in 1992 that “national communities by no means exclusively make and determine decisions and policies for themselves, and governments by no means determine what is appropriate exclusively for their own citizens”.²⁹ On the basis of this observation he argued that traditional concepts of democracy have to be rethought and to this end “a new agenda will have been created for democratic theory and practice”.³⁰ As he demonstrates, the interdependence and interconnectedness of states, the external effects of national political decisions on other countries and the need for instruments for effective joint decision-making at the global level on common problems exceeding the reach of national politics have notably increased; hence his call for “cosmopolitan democratic law”³¹ in a “cosmopolitan democracy”.³² In the same vein, in “The Postnational Constellation” (2001) Habermas envisages that politics in future will become a substantial part of “world domestic politics” implemented in the name of, for and by the “citizens of the world”.³³

Whether the responsible political leaders of the world have learned from these analyses or not, we still have no appropriate institutional settings for exercising democracy beyond the state at the global level. Would their establishment be a threat to the democracy of the nation-state? In his book on the crisis of the European Union, taking the EU as a model for his propositions on the establishment of a global regulatory capacity to meet global challenges, Habermas argues that establishing institutions and processes for regulation at the global level would not be at odds with democracy, but in fact the opposite: it is a requirement of democracy:

In view of a politically unregulated growth in the complexity of the world society which is placing increasingly narrow systemic restrictions on the scope for addition of nation states, the requirement to extend political decision-making

capabilities beyond national borders follows from the normative meaning of democracy itself.³⁴

In some way, the EU can indeed be taken as a model for a democratic constitution of such decision-making capabilities. Habermas develops some important thoughts on a politically constituted world society and on designing institutions and processes along these lines at the global level.³⁵ Globalisation, interconnectedness, environmental imbalances, the external costs of national politics and the economic crisis, as described in the emerging world society with all its complexities, are taken as a challenge to the traditional, nation-state-related democratic system. The incapacity of the nation-state to fully meet its original tasks of providing peace and security in a broad sense, particularly through an effective risk management in the postnational constellation, has placed even the self-determination of people at risk. Whatever democratic processes the internal constitutional system may look like, as a consequence of globalisation the classic nation-state has an increasingly growing democratic deficit.³⁶ This deficit needs to be repaired through an extension of the concept and practice of democracy.

b. “The Political Constitution of World Society”

Though not a purely intellectual construction, “social reality” is itself imposing a “shift in perspective from classical international law to the political constitution of world society”. Habermas, therefore, argues that “environmental imbalances and the risks generated by large-scale technology have given rise to a similar global need for regulation”.³⁷ The constitutional solution proposed for the “postnational constellation” is to extend democracy beyond national borders with a central role for the (reformed) United Nations and a representation of the world’s citizens through an elected global parliament.³⁸ The United Nations “should be reorganised as a politically constituted community of states *and* citizens”.³⁹ With

29. Held (1995, p. 17), quoting Offe (1985, pp. 286) who explains this *ibid.*, p. 283-4, with regard to the nation state.

30. Held (1995, pp. 16-23); see also Beck (note 4, p. 310), as an aspect of politics losing boundaries (“Entgrenzung von Politik”, *ibid.*, p. 300).

31. Held (1995, note 30, p. 31, 239-266), based upon a brilliant description of five “disjunctures” of the modern society, *ibid.* p. 99-140.

32. *Ibid.*, p. 267-286.

33. See Habermas (2001, note 1, p. 104-112): “make a change of course toward a world domestic policy possible without a world government”.

34. Habermas (2012, p. 15); see also *ibid.*, p. 55.

35. *Ibid.*, p. 2, p. 53-70.

36. Habermas (2001, p. 69-76).

37. Habermas, (2012, p. 55).

38. *Ibid.*, p. 60-66.

39. *Ibid.*, p. 56.

regard to the problems of legitimation at this level, though, Habermas envisages a split between two areas of competence: tasks of global security, the prohibition of violence and human rights protection have to be decided by the “world organisation”, while “tasks of world domestic politics with distributive implications are not included in the hierarchically constructed arrangement of competences”; they must be “negotiated transnationally”.⁴⁰ The world parliament, composed of representatives of the world’s citizens and states would have a general deliberative function and would, in particular, “ensure that the competing justice perspectives of world citizens, on the one hand, and of national citizens, on the other, would be taken into account and brought into balance”.⁴¹

Many challenges of globalisation, however, and the global risks dealt with by Ulrich Beck and recognised by Habermas, as well as the new cyber-risks, would not be manageable with such an arrangement. These are basically questions of world domestic politics in need of globally applicable and enforceable regulation which, owing to its limited legitimacy and representation of the world’s citizens, the UN as an institution, even together with a world parliament, is unable to ensure.

3. Conceptualising the “Digital Constellation”

Digitisation not only entails new challenges and risks but also involves a far more important change that is essential for what could be called the “digital constellation”. This change is about organising legitimacy, beyond what Habermas has already assumed when proposing to extend the chain of legitimacy to the “world organisation”:

that the global, in part digitally produced, communication processes extend beyond porous national public spheres in such a way as to enable all peoples to form a reasoned judgment about the moral core content of decisions taken at the UN level.⁴²

There are three major changes to observe that characterise the new constellation that can be called the “digital constellation” and, thus, one step beyond Habermas’

postnational constellation: A new communicative density of the global society (*infra a*), new opportunities for democratic processes (*infra b*), which could allow the development of global responses to the new risks of digitisation (*infra c*).

a. A New Communicative Density of the Global Society

The new information and communication technologies do more than change markets into e-markets, allow financial transactions globally at lightning speed and on a massive scale, and change industrial processes, labour markets as well as administrative structures and processes. Overall, they are pushing society into a new constellation, with a new kind of density of social and communicative relations, and with a so far unknown proximity between people from all over the globe.

The “globalizing impact of the modern communications media” has been described by David Held as “part of a process of ‘cultural globalization’”; it is one of the five disjunctures he has determined.⁴³ He observes that “the development of the new communication systems creates a world in which the particularities of place and individuality are constantly mediated by regional and global communication networks”, with the effect that “the traditional link between ‘physical setting’ and ‘social situation’ is broken”.⁴⁴

Held could not foresee the dramatic developments of the internet, which not only confirms his observation but also carries it to a new dimension. Today, the internet reaches all points of the globe, we get news from everywhere, not filtered through established media only, but directly from people of other continents, in real time. So we can communicate our ideas, opinions, actively participate in public debates and influence political processes, wherever we like. In the “global village” we can observe and have a greater sense than we could in the past of how politics and actions at one place in the world potentially affect people at other places around the globe. The internet allows us even to have a direct personal voice in politics abroad, in real time - and not through diplomatic channels only.

40. Ibid., p. 67-68.

41. Ibid., p. 58-59.

42. Ibid., p. 66.

43. Held (1995, p. 122).

44. Ibid., p. 123.

b. A New Infrastructure for a Global Digital Democracy

With the internet, we can observe the emergence of a new potential for open, deliberative democracy also at the global level: Borderless, real-time communication and information; access to knowledge and education regardless of geographical distances; social networks, discussion platforms and deliberative spaces across borders and continents etc. are allowing the emergence of a global public sphere, which is one of the conditions of global democracy. With the new dimension of proximity, social interrelation and discourse among people worldwide, opportunities for democratic rule-making at the global level are thus visible and they need further consideration.⁴⁵ The distinction between “them” and “us” is fading away, like the other distinctions Ulrich Beck says have already disappeared in the world risk society.⁴⁶ Human dignity and solidarity are felt more and more to apply across borders and continents too, and the emergence of global norms arising from the indignation about crises and disasters in other parts of the world, described by Beck,⁴⁷ is increasing.

The term “digital constellation”, therefore, corresponds to the digital society, which is global like the risk society. It reflects a level of social and communicative relations among people that is comparable to those at the local, regional, national and supranational levels of society, though still more informal and with less attachment. Its potentials, however, include the formation of a global political will across continents, as is already practiced in the areas of internet governance and as can be further developed as a fundamental part of a global order that is capable of meeting global challenges through democratically established rules and concepts.⁴⁸ Among these challenges are the new risks that need to be managed at all levels, and for which regulation is required also at the global level: One example is cyber-security.

c. New Risks and Challenges

The risks attending the use of computers and the progressive digitisation of our societies were observed early on,⁴⁹ but with the changing context and spread of the technologies the proportions they assume are somewhat unexpected and surprising. New products and applications are often put on the market without sufficient care being taken over security. The producers need to learn that a sound security and privacy engineering⁵⁰ is part of the deal. The internet grew out of efforts in military and academic circles to allow computers to connect and to ensure safe communication within the army or easy communication among students. As Oliver Burkeman of the Guardian newspaper says in an article commemorating forty years of the internet in 2009, “hobbyists” played a major role in the early developments of the internet in civil contexts, and safety of the net or cyber security was not among the concerns leading their work.⁵¹ Early warnings on privacy issues⁵² however, and the revelations about mass surveillance by intelligence services⁵³ received little public attention or had only little impact in real terms on enhanced oversight.⁵⁴

In the internet's early stages of development it was difficult to foresee the enormous threats we are discussing today as a by-product of digitisation. Here are but four issue areas that are far from being resolved:

- a. Privacy is one of the major concerns in the public debate on the new techniques of data collection, storage, transfer and processing, including big data analysis and profiling. Human dignity and personal rights are also threatened by hacking-attacks on private computers, e-mailing systems or databases. Last but not least, individual surveillance by law enforcement authorities and mass surveillance by intelligence agencies, as known from the Snowden revelations in 2013, have been made possible in the age of digitisation and have reached an

45. Pernice (2016).

46. Beck (1999, p. 335-36).

47. See supra n 16.

48. For the theoretical concept and a model of global regulation along these lines see Pernice (2016).

49. See the study by the Swedish Minister of Defence (1976).

50. Precious insights into the issue and methodology are provided by Finneran Dennedy, Fox and Finneran (2014).

51. For the history see Burkeman (2009).

52. For an analysis based upon the RFC's of 10 years' previous development see Braman (2011).

53. For one of the most striking examples, see the 2001 Report (Gerhard Schmid) of the European Parliament, on the existence of a global system for the interception of private and commercial communications (ECHELON interception system) of the 'Five Eyes', running since the 1960s until its discovery in 1990 at: <<http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+REPORT+A5-2001-0264+0+DOC+PDF+VO//EN>> [Accessed: 12/08/17]. Today, based upon a comparative analysis, Richard Morgan recommends the 'Five Eyes' model as an international norm for intelligence oversight: Goldman and Rascoff (eds) (2016).

54. For a comparative analysis see: Goldman and Rascoff (eds) (2016).

intensity, depth and extent that have changed the very nature of intelligence. Espionage among states and governments was broadly accepted in the past, but what we are seeing now is intelligence activities affecting the whole of society. Such systematic threats to privacy affect everybody's private life and human dignity, they produce chilling effects on the exercise of fundamental rights and freedoms and, in particular, of the freedom of expression. They can, at least indirectly, even harm democratic processes.

- b. Democratic processes, including elections and democracy at large, are also threatened by other kinds of cyber-attack, such as massive disinformation campaigns through fake news in social media, botnets and systematic manipulation of people on the basis of individualised profiles and psychographic targeting. The case of Cambridge Analytica is a striking example.⁵⁵ Such threats may come from inside a country, but equally from abroad, as in the case of the alleged Russian activities in the latest American election campaign. Hate speech, xenophobia, extremist and populist postings in social media risk poisoning political discourse and culture in western democracies. As it is not possible to determine with certainty the origins of these actions, the platforms and intermediaries are made responsible. Compelling internet platforms to take down illegal content, as the German legislator is doing with the new "Netzdurchsetzungsgesetz", however, is only a very partial and limited solution, which itself raises many questions.⁵⁶
- c. Security, from the personal computer or smartphone up to nuclear power plants, traffic systems or the entire energy grid, is under increasing threat from private or state hacking or cyber attacks. 284,000 cyber attacks against its IT equipment were registered by the German Ministry of Defence within the first nine weeks of 2017 alone. The yearly damage in Germany is estimated to cost 50 billion euros per year. But more importantly, in the case of the crash of a nuclear plant or the breakdown of the energy supply system, the damage can

be unimaginable - not to mention the damage caused by cyber war, given the new capacities established in many countries, including Germany, not only for cyber-defence troops but also with offensive cyber-weapons. New incidents like WannaCry and NotPetya hitting thousands of internationally active companies and even public hospitals are but the latest of the publicly visible cyber attacks rolling around the globe.⁵⁷

The digital revolution with its power, spread and intensity, including the new threats as we are experiencing them today, has changed public awareness of the risks and the need for action. As we can see, all the values at stake, as listed above, are closely linked with fundamental rights or principles, including cyber-security.⁵⁸ As the risks we are facing in the digital society are not external, from outside like a thunderstorm, but self-made risks produced by society itself, it is our joint social responsibility to find appropriate ways of managing them.

National legislation can strive to limit these risks, but threats from sources outside the country, even if detected, are difficult to counter. The country of origin may have different laws and allow the activities that create the threats, and in any event, sanctions cannot be imposed on other countries. Attacks ranging from those on the dignity of the person and privacy to the integrity of information systems, private property or the democratic system and the whole of society at large can vary in scope and gravity. The internet allows attacks across borders from any place in the world, striking targets in any other part of the world. Even if one knew where the attack had originated, the law of the country struck by it would not be applicable to an attacker situated abroad. The rules on state responsibility under international law are difficult to enforce. The risks characterising the digital constellation cannot be managed with the traditional toolbox of national politics. Along with the progressively creative and universal application of the internet, creative and universal strategies for risk management in the digital constellation are needed.

55. For an account of the method see: Grassegger and Krogerus (2016); for attempts by Cambridge Analytica to calm down the discussion, see Beuth (2017).

56. See also the critical remarks of Donahoe (2017). See also Scott and Cerulus (2017).

57. See Hay Newman (2017); Steger (2017); Solon and Hern (2017).

58. See also Leuschner (forthcoming).

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