

Luciano Floridi *Editor*

The Onlife Manifesto

Being Human in a Hyperconnected Era

 Springer Open

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Image made from models used to track debris in Earth orbit. Of the approximately 19,000 man-made objects larger than 10 centimetres in Earth orbit as of July 2009, most orbit close to the Earth. Source: NASA Earth Observatory / Orbital Debris Program Office: http://commons.wikimedia.org/wiki/File:Space_Debris_Low_Earth_Orbit.png original publication date 12 September 2009.

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Introduction

Luciano Floridi

On the 8th of February 2013, *The Onlife Manifesto*¹ was released at an inaugural event held in Brussels by DG Connect, the European Commission Directorate General for Communications Networks, Content & Technology.²

The Manifesto was the outcome of the work of a group of scholars, organised by DG Connect, which I had the privilege to chair: Stefana Broadbent, Nicole Dewandre, Charles Ess, Jean-Gabriel Ganascia, Mireille Hildebrandt, Yiannis Laouris, Claire Lobet-Maris, Sarah Oates, Ugo Pagallo, Judith Simon, May Thorseth, and Peter-Paul Verbeek.

During the previous year, we had worked quite intensely on a project entitled *The Onlife Initiative: concept reengineering for rethinking societal concerns in the digital transition*.³ We decided to adopt the neologism “onlife” that I had coined in the past in order to refer to the new experience of a hyperconnected reality within which it is no longer sensible to ask whether one may be online or offline. Also thanks to a series of workshops organised by DG Connect, we had investigated the challenges brought about by the new digital technologies. We had debated the impact that ICTs are having on human life, and hence how one may re-engineer key concepts—such as attention, ownership, privacy, and responsibility—that are essential in order to gain the relevant and adequate framework within which our onlife experience may be understood and improved.

In the course of our investigations, we soon realised that the output of our efforts would have been more fruitful by summarising it in a short document—which soon became known as *The Onlife Manifesto*—and a series of short commentaries

¹ For the English electronic version and the translations of the *Manifesto* in French, German and Italia, please visit <http://ec.europa.eu/digital-agenda/en/onlife-manifesto>.

² DG Connect manages *The Digital Agenda* of the EU. For further information see <http://ec.europa.eu/digital-agenda/en/inaugural-event>.

³ The website of the project is available at <http://ec.europa.eu/digital-agenda/en/onlife-initiative>.

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(volunteered by some of us) and longer essays (contributed by each of us) that would explain and position *The Manifesto* within the current debates on Information and Communication Technologies (ICTs).

The inaugural event represented the official opening of the public discussion of our work. Many more public meetings and international presentations followed.⁴ As a result, this book is actually a synthesis of the research done in 2012 and the feedback received in 2013.

The book is organised in such a way as to give priority to *The Onlife Manifesto*. This is the document around which the rest of the book revolves. It is followed by eight short commentaries by Ess, my self, Ganascia, Hildebrandt, Laouris, Pagallo, Simon, and Thorseth. The next chapter is the background document. This contains the material that was used to start and frame the conversations during the initial phases of the project. There follow 12 chapters. In them, members of the group, myself included, have presented some of the ideas that guided our contribution to the *Manifesto*. Although each chapter may be read independently of the rest of the book, it is a modular part of the scaffolding that led to the *Manifesto*. A short conclusion, which is more a “to be continued”, ends the book. In terms of authorship, any material that is not explicitly attributed to some author is to be attributed to the whole group, as a collaborative work, endorsed by each of us.

So much for the outline of the project. I shall not add any further details because these can be found in the background document. In terms of an overview of the book’s contents, in the following pages we argue that the development and widespread use of ICTs are having a radical impact on the human condition. More specifically, we believe (see the Preface that introduces *The Manifesto*) that ICTs are not mere tools but rather environmental forces that are increasingly affecting:

1. our self-conception (who we are);
2. our mutual interactions (how we socialise);
3. our conception of reality (our metaphysics); and
4. our interactions with reality (our agency).

In each case, ICTs have a huge ethical, legal, and political significance, yet one with which we have begun to come to terms only recently.

We are also convinced that the aforementioned impact exercised by ICTs is due to at least four major transformations:

- a. the blurring of the distinction between reality and virtuality;
- b. the blurring of the distinction between human, machine and nature;
- c. the reversal from information scarcity to information abundance; and
- d. the shift from the primacy of stand-alone things, properties, and binary relations, to the primacy of interactions, processes and networks.

The impact summarised in (1)–(4) and the transformations behind such an impact, listed in (a)–(d), are testing the foundations of our philosophy, in the following

⁴ For a description see <http://ec.europa.eu/digital-agenda/onlife-news>. Other meetings are listed here: <https://ec.europa.eu/digital-agenda/en/past-meetings>.

sense. Our perception and understanding of the realities surrounding us are necessarily mediated by concepts. These work like interfaces through which we experience, interact with, and semanticise (in the sense of making sense of, and giving meaning to), the world. In short, we grasp reality through concepts, so, when reality changes too quickly and dramatically, as it is happening nowadays because of ICTs, we are conceptually wrong-footed. It is a widespread impression that our current conceptual toolbox is no longer fitted to address new ICT-related challenges. This is not only a problem in itself. It is also a risk, because the lack of a clear conceptual grasp of our present time may easily lead to negative projections about the future: we fear and reject what we fail to semanticise. The goal of *The Manifesto*, and of the rest of the book that contextualises, is therefore that of contributing to the update of our conceptual framework. It is a constructive goal. We do not intend to encourage a philosophy of mistrust. On the contrary, this book is meant to be a positive contribution to rethinking the philosophy on which policies are built in a hyperconnected world, so that we may have a better chance of understanding our ICT-related problems and solving them satisfactorily. Redesigning or reengineering our hermeneutics, to put it more dramatically, seems essential, in order to have a good chance of understanding and dealing with the transformations in (a)–(d) and hence shape in the best way the novelties in (1)–(4). It is clearly an enormous and ambitious task, to which this book can only aspire to contribute.

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Part I
The Onlife Manifesto

The Onlife Manifesto

The Onlife Initiative

Preface The deployment of information and communication technologies (ICTs) and their uptake by society radically affect the human condition, insofar as it modifies our relationships to ourselves, to others and to the world. The ever-increasing pervasiveness of ICTs shakes established reference frameworks through the following transformations¹:

- i. the blurring of the distinction between reality and virtuality;
- ii. the blurring of the distinctions between human, machine and nature;
- iii. the reversal from information scarcity to information abundance; and
- iv. the shift from the primacy of entities to the primacy of interactions.

The world is grasped by human minds through concepts: perception is necessarily mediated by concepts, as if they were the interfaces through which reality is experienced and interpreted. Concepts provide an understanding of surrounding realities and a means by which to apprehend them. However, the current conceptual toolbox is not fitted to address new ICT-related challenges and leads to negative projections about the future: we fear and reject what we fail to make sense of and give meaning to.

In order to acknowledge such inadequacy and explore alternative conceptualisations, a group of 15 scholars in anthropology, cognitive science, computer science, engineering, law, neuroscience, philosophy, political science, psychology and sociology, instigated the *Onlife Initiative*, a collective thought exercise to explore the policy-relevant consequences of those changes. This concept reengineering exercise seeks to inspire reflection on what happens to us and to re-envision the future with greater confidence.

This *Manifesto* aims to launch an open debate on the impacts of the computational era on public spaces, politics and societal expectations toward policymaking in the Digital Agenda for Europe's remit. More broadly, this *Manifesto* aims to start

¹ Those transformations are fully described in the Onlife Initiative Background document available on <https://ec.europa.eu/digital-agenda/en/onlife-initiative>.

a reflection on the way in which a hyperconnected world calls for rethinking the referential frameworks on which policies are built. This is only a beginning...

1 Game Over for Modernity?

Ideas that hinder policy making's ability to tackle the challenges of a hyperconnected era

§ 1.1 Philosophy and literature have long challenged and revised some foundational assumptions of modernity. However, the political, social, legal, scientific and economic concepts and the related narratives underlying policymaking are still deeply anchored in questionable assumptions of modernity. Modernity has indeed—for some or many—been an enjoyable journey, and it has borne multiple and great fruits in all walks of life. It has also had its downsides. Independently of these debates, it is our view that the constraints and affordances of the computational era profoundly challenge some of modernity's assumptions.

§ 1.2 Modernity has been the time of a strained relationship between humans and nature, characterised by the human quest to crack nature's secrets while at the same time considering nature as a passive endless reservoir. Progress was the central utopia, coupled with the quest for an omniscient and omnipotent posture². Developments in scientific knowledge (thermodynamics, electromagnetism, chemistry, physiology...) brought about an endless list of new artefacts in all sectors of life. Despite the deep connection between artefacts and nature, an alleged divide between technological artefacts and nature continues to be assumed. The development and deployment of ICTs have contributed enormously to blurring this distinction, to the extent that continuing to use it as if it were still operational is illusory and becomes counterproductive.

§ 1.3 Rationality and disembodied reason were the specifically modern attributes of humans, making them distinct from animals. As a result, ethics was a matter of rational and disembodied autonomous subjects, rather than a matter of social beings. And responsibility for the effects brought about by technological artefacts was attributed to their designer, producer, retailer or user. ICTs challenge these assumptions by calling for notions of distributed responsibility.

§ 1.4 Finally, modern worldviews and political organisations were pervaded by mechanical metaphors: forces, causation and, above all, control had a primary importance. Hierarchical patterns were key models for social order. Political organisations were represented by Westphalian States, exerting sovereign powers within their territory. Within such States, legislative, executive and judiciary powers were deemed to balance each other and protect against the risk of power abuse. By enabling multi-agent systems and opening new possibilities for direct democracy, ICTs destabilize and call for rethinking the worldviews and metaphors underlying modern political structures.

² By posture, we mean the dual notion of stance *and* posing, or, in other words, of occupying a position *and* being seen occupying it.

2 In the Corner of Frankenstein and Big Brother

Fears and risks in a hyperconnected era

§ 2.1 It is noteworthy that Cartesian doubt, and related suspicions about what is perceived through human senses, have led to an ever-increasing reliance on control in all its forms. In modernity, knowledge and power are deeply linked to establishing and maintaining control. Control is both sought and resented. Fears and risks can also be perceived in terms of control: too much of it—at the expense of freedom—or lack of it—at the expense of security and sustainability. Paradoxically, in these times of economic, financial, political, and environmental crisis, it is hard to identify who has control of what, when, and within which scope. Responsibilities and liabilities are hard to allocate clearly and endorse unambiguously. Distributed and entangled responsibilities may wrongly be understood as a license to act irresponsibly; these conditions may further tempt business and governmental leaders to postpone difficult decisions and thereby lead to loss of trust.

§ 2.2 Experiencing freedom, equality and otherness in public spheres becomes problematic in a context of increasingly mediated identities and calculated interactions such as profiling, targeted advertising, or price discrimination. The quality of public spheres is further undermined by increasing social control through mutual or lateral surveillance (*souveillance*), which is not necessarily better than "big brother" surveillance, as increasingly cyberbullying shows.

§ 2.3 The abundance of information may also result in cognitive overload, distraction, and amnesia (the forgetful present). New forms of systemic vulnerabilities arise from the increasing reliance on informational infrastructures. Power games in online spheres can lead to undesirable consequences, including disempowering people, through data manipulation. The repartition of power and responsibility among public authorities, corporate agents, and citizens should be balanced more fairly.

3 Dualism is Dead! Long Live Dualities!

Grasping the challenges

§ 3.1 Throughout our collective endeavour, a question kept coming back to the front stage: "what does it mean to be human in a hyperconnected era?" This foundational question cannot receive a single definitive answer, but addressing it has proven useful for approaching the challenges of our times. We think that handling these challenges can best be done by privileging dual pairs over oppositional dichotomies.

3.1 *Control and Complexity*

§ 3.2 In the *onlife*-world, artefacts have ceased to be mere machines simply operating according to human instructions. They can change states in autonomous ways and can do so by digging into the exponentially growing wealth of data, made increasingly available, accessible and processable by fast-developing and ever more pervasive ICTs. Data are recorded, stored, computed and fed back in all forms of machines, applications, and devices in novel ways, creating endless opportunities for adaptive and personalised environments. Filters of many kinds continue to erode the illusion of an objective, unbiased perception of reality, while at the same time they open new spaces for human interactions and new knowledge practices.

§ 3.3 Yet, it is precisely at the moment when an omniscience/omnipotence posture could be perceived as attainable that it becomes obvious that it is a chimera, or at least an ever-moving target. The fact that the environment is pervaded by information flows and processes does not make it an omniscient/omnipotent environment. Rather, it calls for new forms of thinking and doing at multiple levels, in order to address issues such as ownership, responsibility, privacy, and self-determination.

§ 3.4 To some extent, complexity can be seen as another name for contingency. Far from giving up on responsibility in complex systems, we believe that there is a need to re-evaluate received notions of individual and collective responsibility. The very complexity and entanglement of artefacts and humans invite us to rethink the notion of responsibility in such distributed socio-technical systems.

§ 3.5 Friedrich Hayek's classical distinction between *kosmos* and *taxis*, i.e., evolution vs. construction, draws a line between (supposedly natural) spontaneous orders and human (political and technological) planning. Now that artefacts *taken globally* have come to escape human control, even though they originated in human hands, biological and evolutionary metaphors can also apply to them. The ensuing loss of control is not *necessarily* dramatic. Attempts to recover control in a compulsive and unreflexive manner are an illusory challenge and are doomed to fail. Hence, the complexity of interactions and density of information flows are no longer reducible to *taxis* alone. Therefore, interventions from different agents in these emerging socio-technical systems require learning to distinguish what is to be considered as *kosmos-like*, i.e., as a given environment following its evolutionary pattern, and what is to be considered as *taxis-like*, i.e., within reach of a construction responding effectively to human intentions and/or purposes.

3.2 *Public and Private*

§ 3.6 The distinction between public and private has often been grasped in spatial and oppositional terms: the home versus the *agora*, the private company versus the public institution, the private collection vs. the public library, and so forth. The deployment of ICTs has escalated the blurring of the distinction when expressed in spatial and dualistic terms. The Internet is an important extension of the public

space, even when operated and owned by private actors. The notions of fragmented publics, of third spaces, and of commons, and the increased focus on use at the expense of ownership all challenge our current understanding of the public-private distinction.

§ 3.7 Nevertheless, we consider this distinction between private and public to be more relevant than ever. Today, the private is associated with intimacy, autonomy, and shelter from the public gaze, while the public is seen as the realm of exposure, transparency and accountability. This may suggest that duty and control are on the side of the public, and freedom is on the side of the private. This view blinds us to the shortcomings of the private and to the affordances of the public, where the latter are also constituents of a good life.

§ 3.8 We believe that everybody needs *both* shelter from the public gaze *and* exposure. The public sphere should foster a range of interactions and engagements that incorporate an empowering opacity of the self, the need for self-expression, the performance of identity, the chance to reinvent oneself, as well as the generosity of deliberate forgetfulness.

4 Proposals to Better Serve Policies

Conceptual Shifts with Policy-relevant Consequences for a Good Onlife Governance

4.1 *The Relational Self*

§ 4.1 It is one of the paradoxes of modernity that it offers two contradictory accounts of what the self is about. On the one hand, in the political realm, the self is deemed to be *free*, and “free” is frequently understood as being autonomous, disembodied, rational, well-informed and disconnected: an individual and atomistic self. On the other hand, in scientific terms, the self is an *object* of enquiry among others and, in this respect, is deemed to be fully analysable and predictable. By focusing on causes, incentives, or disincentives in an instrumental perspective, this form of knowledge often aims at influencing and controlling behaviours, on individual and collective levels. Hence, there is a constant oscillation between a political representation of the self, as rational, disembodied, autonomous and disconnected, on the one hand, and a scientific representation of the self, as heteronomous, and resulting from multifactorial contexts fully explainable by the range of scientific disciplines (social, natural and technological).

§ 4.2 We believe that it is time to affirm, *in political terms*, that our selves are *both* free and social, i.e., that freedom does not occur in a vacuum, but in a space of affordances and constraints: together with freedom, our selves derive from and aspire to relationships and interactions with other selves, technological artefacts, and the rest of nature. As such, human beings are “free with elasticity”, to borrow

an economic notion. The contextual nature of human freedom accounts both for the social character of human existence, and the openness of human behaviours that remain to some extent stubbornly unpredictable. Shaping policies in the remit of the Onlife experience means resisting the assumption of a rational disembodied self, and instead stabilising a political conception of the self as an inherently relational free self.

4.2 *Becoming a Digitally Literate Society*

§ 4.3 The utopia of omniscience and omnipotence often entails an instrumental attitude towards the other, and a compulsion to transgress boundaries and limits. These two attitudes are serious hurdles for thinking and experiencing public spheres in the form of plurality, where others cannot be reduced to instruments, and where self-restraint and respect are required. Policies must build upon a critical investigation of how human affairs and political structures are deeply mediated by technologies. Endorsing responsibility in a hyperconnected reality requires acknowledging how our actions, perceptions, intentions, morality, even corporality are interwoven with technologies in general, and ICTs in particular. The development of a critical relation to technologies should not aim at finding a transcendental place outside these mediations, but rather at an immanent understanding of how technologies shape us as humans, while we humans critically shape technologies.

§ 4.4 We have found it useful to think of re-evaluating these received notions and developing new forms of practices and interactions *in situ* in the following phrase: “building the raft while swimming”.

4.3 *Caring for Our Attentional Capabilities*

§ 4.5 The abundance of information, including “big data” developments, induce major shifts in conceptual and practical terms. Earlier notions of rationality presumed that accumulating hard-won information and knowledge would lead to better understanding and thereby control. The encyclopaedic ideal is still around, and the focus remains primarily on adapting our cognitive capacities *by expanding* them in hopes of keeping up with an ever-growing infosphere. But this endless expansion is becoming ever less meaningful and less efficient in describing our daily experiences.

§ 4.6 We believe that societies must protect, cherish and nurture humans’ attentional capabilities. This does not mean giving up searching for improvements: that shall always be useful. Rather, we assert that attentional capabilities are a finite, precious and rare asset. In the digital economy, attention is approached as a commodity to be exchanged on the market place, or to be channelled in work processes. But this instrumental approach to attention neglects the social and political dimensions of it, i.e., the fact that the ability and the right to focus our own attention is a critical and necessary condition for autonomy, responsibility, reflexivity, plurality, engaged

presence, and a sense of meaning. To the same extent that organs should not be exchanged on the market place, our attentional capabilities deserve protective treatment. Respect for attention should be linked to fundamental rights such as privacy and bodily integrity, as attentional capability is an inherent element of the relational self for the role it plays in the development of language, empathy, and collaboration. We believe that, in addition to offering informed choices, the default settings and other designed aspects of our technologies should respect and protect attentional capabilities.

§ 4.7 In short, we assert that more collective attention should be paid to attention itself as a inherent human attribute that conditions the flourishing of human interactions and the capabilities to engage in meaningful action in the onlife experience.

This Manifesto is only a beginning...

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Part II

Commentaries

Charles Ess—Commentary on The Onlife Manifesto

Charles Ess

§ 1.1. I review many of these challenges and recently developed alternatives—including phenomenology, virtue ethics, the role of embodiment in our knowing and navigating the world, and relational selfhood—in my chapter in this volume.

§ 1.3. As a result, ethics was a matter of rational and disembodied autonomous subjects, rather than a matter of social beings.

To expand on this slightly: ethics in Western modernity has thereby been dominated by traditions of *deontology* (affiliated with Kant and predominant in Germanic countries); *utilitarianism* (beginning with Bentham and Mill, and predominant in English-speaking countries), and French moralism (represented by Montaigne and Ricoeur: Stahl 2004, p. 17).

As discussed in my chapter, the shift towards more relational understandings of selfhood (highlighted in § 4.2—see also below) further entails a shift towards *virtue ethics*. See further: Ess (2013), pp. 238–243, along with sample applications of virtue ethics to digital media (pp. 243–245) and “Emerging notions of relational selfhood and distributed morality” (pp. 259–263).

§ 3.6. ... the [public/private] distinction when expressed in spatial and dualistic terms. The Internet is an important extension of the public space, even when operated and owned by private actors. The notions of fragmented publics, of third spaces, and of commons, and the increased focus on use at the expense of ownership all challenge our current understanding of the public-private distinction. (Emphasis added, CE)

For additional details on how “privacy” is reconceptualized in light of these transformations (most centrally, the shift from more individual towards more relational conceptions of selfhood)—including, most importantly, Helen Nissenbaum’s theory of privacy as “contextual integrity” (2010)—see my contribution to this volume, and Ess and Fossheim (2013).

The text I have highlighted points towards an increasingly urgent area of analysis and debate—namely, new opportunities and risks to democratic processes,

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norms, and rights, beginning with freedom of expression, as taken up in our Onlife public spheres, where these public spheres are increasingly controlled by corporations. These risks include “corporate censorship”—i.e., limitations on online expression as imposed by, e.g., Apple, Facebook, Google, and other major owners of what are increasingly our default public spaces. This censorship is both aesthetic—e.g., Facebook and Apple’s allergies to women’s breasts (perceived as U.S.-centric prudishness in much of the rest of the world) and political (e.g., Hestres 2013). Moreover, as recent revelations of the U.S. National Security Agency’s PRISM program dramatically highlight, these and other corporations rarely resist governmental requests for the massive amount of “our” data that they hold and process.

§ 4.2 Relational self. Shaping policies in the remit of the Onlife experience means resisting the assumption of a rational disembodied self, and instead stabilising a political conception of the self as an inherently relational free self.

Again, the embodied and relational self is a core focus of my contribution to this volume. Most recently, Elaine Yuan (2013) has developed what to my knowledge is the most extensive and nuanced critique of what she calls a “culturalist” approach to Internet Studies—i.e., the radically interdisciplinary and cross-cultural field of inquiry into our lives Onlife—where such a “culturalist” approach rests precisely on the high modern assumption of a radically autonomous individual moral agent. Yuan examines East Asian societies, including China, as thereby exemplifying the concrete realities of relational selfhood—specifically as shaped by Confucian tradition—as contemporary alternatives. Yuan’s analysis and findings importantly corroborate and extend my discussion of the relational self and Confucian societies in the 4th section of my contribution to this volume.

§ 4.3. Digitally literate society: Endorsing responsibility in a hyperconnected reality requires acknowledging how our actions, perceptions, intentions, morality, even *corporality* are interwoven with technologies in general, and ICTs in particular. (Emphasis added, CE)

As I seek to argue in my contribution, we should be careful *not* to be misled by the term “digital” in the phrase “digitally literate society.” Rather, as phenomenology and neuroscience articulate, we remain embodied and thereby analogue creatures in ways that are importantly distinctive from “the digital”. In particular, I urge that our attention to “digital literacies”—what in Medium Theory is articulated in terms of the *secondary orality* of “electric media,” including our digital/media environments—be balanced by continuing attention to the skills and abilities affiliated with *literacy-print*, beginning with writing as a “technology of the self,” meaning the individual-autonomous self required for robust democratic societies.

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Luciano Floridi—Commentary on the Onlife Manifesto

Luciano Floridi

§ 1.1 The transformations mentioned in this paragraph may be understood in terms of a fourth revolution (Floridi 2012; Floridi Forthcoming) in our philosophical anthropology. After Copernicus, Darwin, and Freud (or neuroscience, if one prefers), ICTs (that is, Turing), are casting new light on our self-understanding. It may be preferable to speak of a *informational* era rather than a *computational* era, because it is the increasingly pervasive and ever more important life-cycle of information (from creation through management, to use and consumption, see (Floridi 2010) that deeply affect both individual and societal well-being. In a technical sense, computers and computation are only a small part of this wider phenomenon.

§ 1.2 There are much more nuanced and balanced interpretations of Modernity as a historical and cultural phenomenon, but the point here is not to offer a scholarly interpretation of a stage in the history of ideas. Rather, I understand the word “modernity” in the manifesto as a philosophical *portmanteau* (or linguistic blend) that combines into one word the bundle of concepts/phenomena discussed in this and the following sections.

§ 1.3 Paradoxically, the more ICTs advance, the more humanity appears responsible for how things go in the world (including in terms of forecasting and prevention of consequences and future event), and yet, the more difficult it becomes to identify specific sources of responsibility. Increasing levels of responsibility and co-responsibility are generating new challenges. Clearly, there is much need for understanding the new phenomenon of so-called “distributed morality” (Floridi 2013a, b).

§ 2.1 Modernity is also a pedagogical project: the intellectualistic (as in Socratic intellectualism: the view that people make mistakes because they do not know better) idea that more information (of all kinds, theoretical, technological, practical, etc., see the editorial project of the *Encyclopédie*) will lead to more learning, which in turn will lead to improved choices, and hence to a progressive amelioration of the human condition.

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§ 3.1 What seems to be lacking, in affluent societies, is the fundamental engagement with the human project: the increasing amount of leisure appears to find our culture unprepared. It is as if, having worked hard to gain the right to be on vacation, humanity might then be uncritically unprepared to make the most of its most precious resource, time. Technologies are used to save time first, and then to kill it. So one of the pressing political questions that we are facing in advance information societies is: what sort of human project are we working on?

§ 3.2 The reader interested in knowing more about the idea of *onlife* may wish to consult (Floridi 2007).

§ 3.6 The distinction between public and private will probably need to be re-conceptualised, because frameworks based on physical boundaries (the ever pervasive analogy of trespassing) and possession (the equally pervasive analogies of ownership and theft) are out-dated conceptual modules, insofar as they are linked to a modern or “Newtonian” metaphysics based on inert things and mechanical interactions.

§ 4.1 The reader interested in knowing more about the idea of the relational self may wish to consult (Floridi 2011).

§ 4.4 I suggested the phrase “Building the raft while swimming” in order to emphasise the radical nature of the philosophical task ahead of us, rather than stressing any anti-foundationalist philosophy. Understanding philosophy as conceptual design means giving up not on its foundationalist vocation, but rather on the possibility of outsourcing its task to any combination of logico-mathematical and empirical approaches. This was not Neurath’s intention when he first introduced the metaphor of the raft in the 1930s. As he wrote (Neurath 1959, p. 201): “There is no way of taking conclusively established pure protocol sentences as the starting point of the sciences. No *tabula rasa* exists. We are like sailors who must rebuild their ship on the open sea, never able to dismantle it in dry-dock and to reconstruct it there out of the best materials. Only the metaphysical elements can be allowed to vanish without trace. Vague linguist conglomerations always remain in one way or another as components of the ship.”

§ 4.5 Rethinking and developing new forms of education are certainly among the most exciting challenges of our time. There are great opportunities, but also a serious risk of missing them. In the same way as we lack a post-Westphalian way of approaching politics, likewise we are still missing a post–Guttenberg way of approaching pedagogy. The difficulty is further exacerbated by the mental constrain imposed by the overbearing presence of the book for so many centuries, which makes it hard to consider alternative forms of education (think for example of the written assessment procedure); and by the omnipresence of ICTs, which constantly distract our reflection into believing that the real issue concerns which technical solutions are or will be more feasible to manage learning processes involving digital natives, when in fact the fundamental problem is not how but what: what kind of knowledge will be required and expected when living onlife.

§ 4.6 What is ultimately finite, precious, not-renewable, and unsharable is actually time. When talking about finite attentional resources, we should also be concerned with the attention–time dedicated to something, because that is neither boundless nor replaceable.

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Commentary on the Onlife Manifesto

Jean-Gabriel Ganascia

§ 1.1. A careful attention to some aspects of the present society shows that most of the concrete impacts of the computational era on the public space have been unexpected. This does not only mean that the computers and networks have proliferated faster than imagined before, but also that the type of social consequences of these developments—e.g. social networks, micro-blogging, wikis, high-frequency trading etc.—have very often been far away from the conceptions that many warned people had before. As a consequence, policymakers need not only to be open to the future developments of technologies and to their social effects, but also to prepare to be surprised by the future.

§ 1.2. Undoubtedly, modernity is rooted in the “Modern Age”, even if it is far more than a temporal era. As such, it begins at the end of the “Middle Ages” that corresponds either to 1453, with the conquest of Constantinople, or to 1492, with the first travel of Columbus to the Americas. Besides, modernity relates also to the Enlightenment philosophy, since the late sixteenth century, which put emphasis more on the results of experimental sciences than on the respect of traditional authorities. Lastly, modernity corresponds to these social and industrial development that originated in the eighteenth century in Western Europe, especially in Great Britain, and that was characterized by the rationalization of the production processes. From this respect, the end of modernity that we affirm in this manifesto corresponds simultaneously to the end of a period of history, which was centered on the Western Europe and Americas, and to the end of a type of philosophy to the end of a social and economical environment that was characterized by the illusion that knowledge itself could lead to a perfect and total control of the nature. Does it mean that we are entering in an epoch that some philosophers of the eighties and nineties, like Jean-François Lyotard (1979) and Jean Baudrillard, have qualified as “post-modernity”? That is an open question that certainly deserves a careful attention and some extensive discussions, which go far beyond the purpose of this manifesto.

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§ 2.1. We say: *It is noteworthy that Cartesian doubt, and related suspicions about what is perceived through human senses, have led to an ever-increasing reliance on control in all its forms.* Obviously, it is not *to throw out the baby with the bath water.* The doubt, as introduced by Descartes, and all the suspicions about what is perceived, have contributed to build and to think the “conscious self”. For instance, the Husserlian phenomenology is rooted on such a doubt, which corresponds to a crucial moment in the reflection. This is not directly related with the “ever-increasing reliance on control”, which is a consequence of the rationalization of the processes of production in nineteenth century modernity. To address this point, we need to distinguish the reason from what Horkheimer calls, in the *Eclipse of Reason*, the “instrumental reason”, which is characterized as “means to an end” and which leads the reason to collapse into irrationality (1947).

§ 4.2 *We believe that it is time to affirm, in political terms, that our selves are both free and social.* That is obviously true, but, in itself, this idea is not new. For instance, during the French revolution, the opposition between the *Montagnards*, whose most prestigious representative were Marat, Danton and Robespierre, and the *Girondins* corresponded exactly to the tension between an aspiration to social on the one hand and an aspiration to freedom and economical development on the other hand. However, the way this tension between freedom and fraternity is resolved depends on the technological artifacts that mediate our interactions, which explains its particular twist in the present world.

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Dualism is Dead. Long Live Plurality (Instead of Duality)

Mireille Hildebrandt

What does it mean to be human in a computational era? The Manifesto rightly suggests that though such a question cannot generate final answers, it must be addressed to come to terms with the Onlife experience.

1. The Manifesto states that we prefer dual pairs to oppositional dichotomies, explaining this in terms of the dual pairs of control and complexity, *taxis* and *kosmos*, and public and private. This is of particular interest because the concept of dual pairs has a very specific meaning in mathematics and is relevant for machine learning techniques, which are at the heart of the emerging computational infrastructure.
2. Whereas a dichotomy has been defined as ‘a set of two mutually exclusive and jointly exhaustive alternatives’,¹ a dual pair has been defined as ‘a pair of vector spaces with an associated bilinear form’.² Though it would be interesting to investigate what this means in relation to control, complexity, *taxis*, *kosmos*, public and private, I would prefer to investigate how we may proceed from thinking in terms of dichotomies and whether this requires thinking in terms of pairs at all.
3. The first problem with a dichotomy is that it requires mutually exclusive definitions, which presumes that it helps to partition reality into discrete and separate chunks. Though computational techniques may indeed require such digitization, the reduction of the analogue flux of life to digitizable bites has its own drawbacks. Hayles (1999) has described the flaws and the costs of early cybernetics in her *How we became posthuman*, focusing on the attempt to disembodify and dematerialize information, abstracting from the content and the semantics to gain a better view of its processing and syntactics.

¹ <http://c2.com/cgi/wiki?FalseDichotomy>.

² http://en.wikipedia.org/wiki/Dual_pair.

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4. Though we cannot deny that this attempt has yielded unprecedented results, we must also acknowledge that at some point the processed information must be reintegrated in what Stiegler (pace Husserl) has called our own primary retention (individual memory), to acquire meaning and to be part of our lifeworld (Stiegler 2013).
5. It is important, then, to note that the computational era is rooted in the most extreme type of dichotomous thinking: that of constructing discrete, machine readable bits. To be human, here, means to remember that life is continuous and plural and experienced rather than calculated.
6. The second problem with a dichotomy is that it assumes jointly exhaustive alternatives, which entails that the pairs forming the dichotomy cover all there is to be said about whatever they aim to describe. In his pivotal 'The duality of risk assessment', Ciborra (2004) has elucidated how the hidden presumption that e.g. a risk analysis exhaustively describes a developing reality endangers the resilience of whoever depends on that analysis to remain safe.
7. Smart Grids, policing, medical treatment or the food industry should never assume that the data derivatives that inform their risk analyses cover all that is relevant. To prevent the kind of havoc that plagues our financial system we must instead keep an open mind, assuming that the computational decision systems that feed such critical infrastructure are as biased and fallible as any smart system necessarily must be. To be human, here, means to admit such fallibility as core to the wondrous fragility of life.
8. An interesting example of a dichotomy that confuses instead of clarifies what it means to be human in the computational era, is the dualism that pervades the domain of the philosophy of mind. The cartesian idea of a separate *res extensa* and a separate *res cogitans* that together describe reality has given rise to a series of interrelated problems that still haunt much of our understanding of e.g. responsibility and accountability in a world of distributed causation. To overcome the confusion that results from this kind of dualism I believe that we should not merely turn to overlapping instead of mutually exclusive dual pairs, but take leave of the idea that reality should necessarily be described in pairs altogether.
9. Whether it makes sense to think in pairs or in other types of distinctions should depend on the context and the aim of our thinking, not on a propensity to keep things simple. I would, therefore, rearticulate the heading and speak of: *Beyond dualities. Long live plurality.*

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Commentary by Yiannis Laouris

Yiannis Laouris

Working towards this Manifesto has been a most inspiring experience; being among philosophers in this think tank, I was initially somewhat skeptical as to the feasibility of quite different-minded scientists, some with very strong views, managing to converge on a text that satisfactorily draws attention to key concepts that require re-engineering. I especially enjoyed the fact that, like the ancient Athenians, we treated philosophy, science, and politics as strongly interconnected disciplines. Even if this is all that is learned from our work, the world will benefit tremendously!

The Manifesto reflects my personal views, which is why I have endorsed it. In my chapter, I elaborate on the need to re-engineer the concept of life and how the emerging immortality of artifacts and information exerts pressure on achieving immortality of the mind and/or of the human; the blurring of concepts like “being human” or “being alive.” In this short commentary, however, I chose to draw special attention to the risks created by the feasibility of direct democracy as encapsulated in § 1.4 because of their urgency:

§ 1.4 ... By ... opening new possibilities for direct democracy, ICTs destabilize and call for rethinking the worldviews and metaphors underlying modern political structures.

In the chapters’ section, I elaborate on the requirements of technologies needed to reinvent democracy in the digital era, especially in light of the virtual immortality and abundance of information, which inevitably result in cognitive overload, as reflected here:

§ 2.3 The abundance of information may also result in cognitive overload, distraction...

Democracy in the twenty-first century has come to refer almost exclusively to the right to take part in the political process, i.e., the right to vote. Since ICTs open up tremendous possibilities for real-time feedback and frequent polling, in the minds of many, extra voting equals more democracy. “Direct Democracy” is a term coined

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recently, referring to a specific (one of many) model of democratic participation in which all members have equality of access, vote, and voice on every issue. The adoption of such an approach in taking political or other decisions would undoubtedly cause chaos. It should therefore be rigorously distinguished and differentiated from *massive but authentic democratic participation*. The latter demands that all relevant stakeholders be given the opportunity to participate and a voice to argue over the issues that influence their lives. Votes should be weighted in some way in order to ensure that decisions take advantage of what we call “collective wisdom.” This is not a trivial problem to solve. Identifying who the “relevant” stakeholders are and deciding who should have a (weighted) vote on which matters is extremely complex. Even when the theoretical challenges are resolved, we will need to develop systems that implement the theory.

Athenians of the Golden Age were engaged collectively in searching and carefully examining meanings and alternatives together through a process they called “deliberation.” They aimed to fully understand the underlying problems, clarify the debatable situation, and achieve consensus. More than two millennia later, we need to reinvent democracy in such a way that millions can participate effectively. We must guarantee that the individual will have access to all relevant information, alternatives, arguments, and predicted futures that might emerge according to the choices s/he makes. We will probably need to invent new liquid forms of democracy in which ideas can flow from crowds and are shaped through a process of open deliberation. Future citizens should somehow become capable of choosing alternatives by harvesting their collective intelligence and wisdom rather than allowing the personal interests and pathetic behaviors of individuals to prevail in the decision-making process. Since technology will be absolutely essential, the democratization of the processes of design and development of such new technologies also becomes a fundamental requirement. In addition, we must guarantee access and simplicity of interfaces.

In sum, we should design spaces and technologies and implement policies that respect our cognitive constraints, safeguard our attention capabilities, and secure our individual human rights and freedoms. We ought to develop systems that guarantee the authentic participation of those whose lives might be influenced by any decisions taken. Courses of action should be chosen based on their capacity to facilitate change toward a collectively defined, desired, and agreed-upon ideal future state.

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Comments to the Onlife Manifesto

Ugo Pagallo

§ 0. I love the “Onlife Manifesto,” although I still have some problems with it. Of course, this is understandable since other manifestos had, say, only two authors, such as that of Friedrich Engels and Karl Marx, whilst our manifesto has more than twelve mothers and fathers. To cut to the chase, let me insist on two of my problems.

§ 1.1 First, it is all about our understanding of the past and, hence, the very notion of “modernity.” I do agree that some assumptions of modernity are simply dead and, yet, thinking about the work of Spinoza, or of Leibniz, rather than Descartes and some advocates of the Enlightenment, I would say “Modernity is dead” and, still, long live Modernity and some of its venerable fruits! In Heideggerian terms, we should conceive the past as a matter of *Gewesenheit*, rather than *Vergangenheit: Zuhanden*, rather than *passé dépassé* (Heidegger 1996). This different way of grasping what is gone reverberates on how we intend to address and project the future, namely the second of my problems: “this Manifesto aims to start a reflection on the way in which a hyperconnected world calls for rethinking the referential frameworks on which policies are built” (see the preface).

§ 4.6 Whilst the conclusion of our Manifesto mentions the relevance of “default settings and other designed aspects of our technologies,” in order to “respect and protect attentional capabilities,” we should have further insisted on this point, so as to test our debt to Modernity and, hence, to assess what is specific to the normative dimension of our concept reengineering exercise. Modernity has bequeathed to us the very idea of limited and accountable government, much as the notion of constitutional rule of law. Still, over the past decades, an increasing number of issues have become systemic and constitutional powers of national governments have been joined—and even replaced in a sort of Hegelian *Aufhebung*—by the network of competences and institutions summed up by the ideas of governance, good governance, and good enough governance. This has been a U.N.’s hot topic since the last 1990s and, correspondingly, this is why I review many of these challenges in my chapter in this volume: indeed, the time is ripe to address what is specific to the

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good onlife governance, namely the evolutionary processes of spontaneous orders and multi-agent systems that:

1. Are ICTs-dependent and ubiquitous, that is, transnational; and,
2. Ultimately cannot be reduced to traditional political planning, *i.e.*, the *taxis*-side of the law.

In addition to the usual hard and soft law-tools of governance, such as national rules, international treaties, or codes of conduct, I am convinced that particular attention should be drawn to the governance actors *sub specie* game designers: the governance of complex multi-agent systems interacting “onlife” does increasingly hinge on the technicalities of design mechanisms (Pagallo 2012a, b).

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Comment to the Manifesto

Judith Simon

In Sect. 2.1., the manifesto rightly emphasizes the linkages between knowledge, power and control—a relationship that has occupied philosophers from Bacon all the way to Michel Foucault. Historically, churches and later on, states have long been the major informational agents, collecting data about their members and citizens from the date of birth until their deaths. Naturally, this information gathering has never stopped at national boundaries, since knowledge about the enemies has been just as essential as a means of staying in control.

Nowadays, as the Manifesto correctly notes, new informational agents, new powerful players have emerged on the knowledge/power axes: big internet companies, such as Facebook, Google or Amazon, as much as the more hidden ones controlling the backbone of the internet traffic. These actors occupy enormously powerful nodes, and function as “obligatory passage points” (Callon 1986) in epistemic, just as much as in economic and political matters.

The Manifesto seems to suggest that we have entered a post-Westphalian world in which nation states seem to have lost much of their power. On the surface this observation appears almost commonsensical: not only require many challenges we face multi-national effort—think of the Kyoto protocol as an attempt to tackle climate change. We also have various transnational authorities that pose restrictions on the sovereignty of nation states.

Nonetheless, recent disclosures around Prism, Tempora and XKeystore, i.e. the exposure of massive surveillance through the American and British Secret Services appears to question this power decline of the nation state. One may say that the states fight their final battles. However, it seems much more plausible to recognize that the old and the new big players on the power/knowledge axis form alliances and work nicely together. It is as it has always been: the powerful constantly enroll allies to increase their power: what has been pursued through marriages in the times

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of kingdoms now simply has a new face: official contracts and hidden agreements between nation states and multi-national internet companies are used to consolidate the supremacy of those mastering the power game.

Blaming the powerful agents alone however, merely requesting new laws and regulations will fall short of offering a remedy to these power games. Instead, we need to understand power as a network effect, power as a result and a cause of distributed agency—and therefore accept partial responsibility for the state of affairs ourselves. As Evgeny Morozov has aptly put it, we—each and every one of us—also need to confront the temptations of information consumerism. As long as we willingly trade our data for free or cheaper products, regulations will not solve the problems: we collude in the game ourselves. Morozov (2013) writes: “European politicians can try imposing whatever laws they want but as long as the consumerist spirit runs supreme and people have no clear ethical explanation as to why they shouldn’t benefit from trading off their data, the problem would persist.”

In our hyperconnected world, the alliances between the powerful critically depend upon the compliance of the masses. However, it has also never been easier to quit playing along, to change the game through distributed collective action. In principle, we have access to a wide variety of products and services and we can and should be more careful in our choices. We need to understand the relationship between buying and being sold and act accordingly. As consumers, we need to acknowledge that once we stop being willing to pay for products and services, we are paying simply with a different currency—our data. We need to act as citizens as well. We need to mobilize our politicians to stand up to our defense, to counter the on-going attacks to our privacy and to fulfill their responsibilities as our representatives in drafting and enforcing laws and regulations to secure our freedom.

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May Thorseth: Commentary of the Manifesto

May Thorseth

The *information abundance* and the *primacy of interactions over entities* is particularly important in dealing with the problem of the public, i.e. the question of how to make the public well informed. The importance of being well informed relates to issues like how to fight intolerance and fundamentalism in particular. Besides, the problem of the public is about education: what foci and what kind of methodologies to apply in teaching younger generations to broaden their perspectives? As an example, a common exercise for school children is to use the Internet to collect information for assignments. As yet, the teaching staff often seems to lack the relevant competencies for guiding their students.

In political contexts the problem of information abundance also needs to be resolved: the temptation to collect information by looking up websites rather than discussing or interacting with political opponents is a threat to the public, particularly to making the public better informed. The case of July 22, 2011 in Norway is but one example of lack of relevant interaction between extremists and their opponents, i.e. more moderate and democratically oriented people. One claim in the aftermath of this event has been that the public has not taken seriously extreme viewpoints as put forth on the Internet. As a result, there has been insufficient public debate.

Another important issue in the Manifesto is about distributed or (lack of) shared *responsibility*. As no single governmental or non-governmental bodies or other organisations are able to keep control, and information flows are less transparent than before, this seem to have a negative impact on responsibility: no single institutions or individuals can be assigned responsibility as in pre-IT times. Technologies that are gradually substituting human responsibilities endangers individuals' democratic freedoms—thus, there is a need for research to focus on empowering-/disempowering developments resulting from shortage of human interactions.

Another very important issue is *the public-private distinction*. Rather than speaking in terms of distinction between the two it makes better sense to speak of *comple-*

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mentary relations between them: home is no longer necessarily a private space as distinct from public spaces. As an illustration, political and public negotiations need not necessarily take place in a public space as Skype is available almost everywhere. And vice versa, when it comes to private conversations they may just as well take place in public space. Further, what is conceived as private or public seems to have changed, too. What used to be considered intimate among young people, like e.g. sexual relations are viewed far less private compared to parents' occupations, or political affiliations of today. Thus, rather than speaking of private versus public there is a need to emphasise the importance of context: whatever is contested in public space is no longer purely private. Globalisation, not least due to the spread of information technology implies a breakdown of any clear cut distinction between private and public. As a consequence there is a need to redefine public and private spaces, most importantly what sense we currently want to make of these categories. As an example it is no longer obvious that the consumption of private households/individuals is not a public issue when discussing e.g. rights and responsibilities for commons like natural resources. Knowledge is also a commons in this sense, and thus we need to question whether there should be both rights and duties associated with it. Private and public are no longer counterparts, but rather complementary categories being challenged by information and communication technologies.

Consequently, being well informed about societal matters is truly a public matter, as well.

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Part III
The Onlife Initiative

Background Document: Rethinking Public Spaces in the Digital Transition

The Onlife Initiative

What I propose in the following is a reconsideration of the human condition from the vantage point of our newest experiences and most recent fears. This, obviously, is a matter of thought, and thoughtlessness—the heedless recklessness or hopeless confusion or complacent repetition of ‘truths’ which have become trivial and empty—seems to me among the outstanding characteristics of our time. What I propose, therefore, is very simple: it is nothing more than to think what we are doing.

Hannah Arendt, Prologue of “The Human Condition”, 1958.

The deployment of ICTs and their uptake by society affect radically the human condition, insofar as it modifies our relationships to ourselves, to others, and to the world. This digital transition shakes established reference frameworks, which impact the public space, politics itself, and societal expectations toward policy making. The Onlife Initiative intends to explore these impacts within the policy context of the Digital Agenda for Europe.

1 What do we Mean by Concept Reengineering?

There is no such thing as a neutral apprehension of reality. Philosophy tells us that we grasp the world around us through concepts. Even when we think that we are representing our environment in a specular or objective way, our perception is necessarily mediated by concepts, as if they were the keyholes through which we inevitably see and perceive reality. Concepts show their efficacy by providing us with an understanding of our surrounding realities and a means by which we are able to grasp those realities.

Knowledge aggregates around given concepts, and paradigmatic shifts happen when new concepts are designed, taken up, adapted or re-adapted, thereby providing a new basis for knowledge accumulation and for the production of a new sense of meaning (semanticisation).

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Concept reengineering is an activity that aims at putting ourselves in the best position to reflect meaningfully on what happens to us, and thereby help us envision the future in positive terms. The dominance of negative projections about the future is often the signature of the inadequacy of our current conceptual toolbox. We fear and reject what we fail to understand and semanticise. So, the overall purpose of this concept reengineering exercise is to acknowledge such inadequacy and explore alternative conceptualisations that may enable us to re-envision the future with greater confidence.

It is acknowledged that, collectively, we are undergoing a deep crisis, the expression of which is apparent in economic, social, environmental, and financial terms. In a less obvious manner, but equally, if not even more significantly, the crisis affects the public space, politics itself, and how we conceptualise both ourselves and the world as well as our mutual interactions. Through the concept reengineering exercise, we intend to focus on the issue of public spaces and put philosophy in practice within the realm of policy making.

Sources of inspiration and references will be multiple and diverse, but the notion of public space underlying this proposal is greatly inspired by, if not borrowed from, Hannah Arendt. Her vision rests on the fact that politics emerge from the plurality and that the public space is the space lying between us, where each of us can experience freedom. If that space between-us collapses, and if politics becomes only a means to an end (whatever good this end pretends to be), then we are not far from totalitarianism, she argues. She invites us to dissociate ourselves from the illusion that the most efficient way to make society good is to make each of its members a good person. To Jonas, who held this view, she replied: “if this was true, then we are lost!”¹ And indeed, as humans, we all experience the internal dialogue between good and bad. That we need sometimes to make this polarized figure external can be part of building our collective identity, but we should not fool ourselves by thinking that we can really strive, through politics, to make each human a unequivocally good being. For that reason, this exercise will focus on what matters for the public space, rather than what matters for each individual, or, in other words, it will focus on the means and preconditions needed to reinvigorate the sense of plurality which is essential if each of us is to experience freedom in this hyperconnected era².

To the best of our knowledge, this experience of putting philosophy into practice is a genuinely new one, but should this not be the case, lessons will be drawn from similar past experiences. This is also part of the exercise.

¹ TV broadcast discussion, Toronto, 1972 reported in “Edifier un monde, Interventions 1971–1975”, Hannah Arendt, p. 98, Editions du Seuil, Paris, 2007.

² “If philosophers, despite their necessary estrangement from the everyday life of human affairs, were ever to arrive at a true political philosophy, they would have to make the plurality of man, out of which arises the whole realm of human affairs—in its grandeur and misery—the object of their *thaumadzein*. Biblically speaking, they would have to accept—as they accept in speechless wonder the miracle of the universe, of man, and of being—the miracle that God did not create Man, but ‘male and female created He them.’ They would have to accept in something more than the resignation of human weakness the fact that ‘it is not good for man to be alone.’” Arendt (1990).

2 What do we Mean by the Digital Transition?

Let's call digital transition the societal process arising from the deployment and uptake of ICTs. In a remarkable article "*The computer for the 21st century*", published in the Scientific American in September 1991, Mark Weiser suggested that, after the mainframe and the personal desktop computer, the next step will be ubiquitous computing, i.e. a technology that has become so pervasive that it is invisible to us and totally embedded in our lives. In their recent book, Dourish and Bell³ argue that we have already entered into the era of ubiquitous computing, rather than seeing it as something that may happen in the future. The ETICA research project⁴ has identified a list of emerging ICTs⁵ that are bringing new, ethical concerns. In fact, together with the current burgeoning of devices, sensors, robots, and applications, and these emerging technologies, we have entered a new phase of the information age, a phase where the hybridisation between bits and other forms of reality is so deep that it radically changes the human condition in profound ways. The ubiquitous computing vision is a reasonable asymptotic view, which can be taken as the current background against which society is striving to actualise its norms, values and codes of behaviour.

3 Why Such an Exercise in the Realm of the Digital Agenda?

The digital transition shakes established reference frameworks in, at least, four ways:

- a. blurring the distinction between reality and virtuality;
- b. by blurring the distinctions between human, machine and nature;
- c. by reversing from scarcity to abundance, when it comes to information;
- d. by shifting from the primacy of entities over interactions to the primacy of interactions over entities.

If not well considered, these issues push us back and forth between distrust and blind faith: none of these two are able to ground a good public life and provide meaning. As a society, we are confronted with a learning challenge of how to actively shape our lives in this technologically-mediated world.

Let us consider these four issues in turn.

³ Paul Dourish and Genevieve Bell, *Divining a digital future: mess and mythology in ubiquitous computing*, MIT Press, 2011.

⁴ Ethical issues of emerging ICT applications. <http://moriarty.tech.dmu.ac.uk:8080/index.jsp?page=10516>.

⁵ List of technologies: affective computing, ambient intelligence, artificial intelligence, bioelectronics, cloud computing, future internet, human-machine symbiosis, neuroelectronics, quantum computing, robotics, virtual/augmented reality.

3.1 The Blurring of the Distinction Between Reality and Virtuality

Plato's allegory of the cave, the distinction between body and mind, or that between internal fantasies and actual behaviours are fundamental and ancestral dichotomies through which we think and act. They are three among many other expressions of the dualist way of thinking. Philosophers have argued that these dichotomies are fragile and more illusory than one may think. However, dualist thinking remains a pillar of common sense and of the moral and political experience. By making virtuality more real than ever before, the digital transition undermines the real/virtual divide, and thereby all dualist forms of thinking. This calls for new framings of several issues, either through monism, a new dualism, or pluralism. Cognitive sciences can usefully complement the philosophical perspective with a scientific account of the link between the different ways of thinking (in pluralist, dualist or monist terms) and behaviours.

In concrete terms, exploring these issues will shed light, for example, on the level of continuity in behavioural and moral terms that should be expected in the virtual and the physical public spaces. For example, anthropologists tell us that it is common practice for people to lie about themselves on the internet, not necessarily for bad reasons, but rather as a social practice: minors and dating adults lie about their age, appearance, interests, and so forth. Is this really affecting trust or, on the contrary, is it part of the acculturation of ICT tools by society, producing the shadow areas that any individual needs to live as a human? Another issue relates to where one should draw the line between real and virtual when it comes to committing crimes, such as murder or rape? At the physical end, it is and must be strictly forbidden and severely punished. At the virtual end, when dealing with a mere solitary game, it can be considered as being part of the private sphere and tolerated as part of one's own deep intimacy. Yet, there is a middle ground between these two ends (social gaming, avatars, web-dating etc.), and it is not trivial to draw the line between the space where public morality has to apply and the space where inner dialogues and negotiations take place.

3.2 The Blurring of the Distinctions Between People, Nature and Artefacts

Once upon a time, it was easy to distinguish people from artefacts and nature. The blurring of the distinction has been increasing since Darwin and the industrial era. After Darwin, we acknowledge that we are part of nature, in full continuity with animals. Since the industrial era, artefacts and nature have become intrinsically connected, through the metabolism of the industrial development, which is drawing on natural resources. More recently, with the use of medical devices, human beings and artefacts have also connected.

The digital transition acts as a huge accelerator of the blurring of these once effective distinctions. The multiplication of sensors and prostheses, the progress of cognitive sciences and biological engineering blur the distinction between humans and artefacts. The multiplication of artefacts, the intensification of industrial development on the whole planet and the increase of monitoring means we may not exhaust the planet, which will pursue its course in the universe, but it surely exhausts the notion of blank nature or of an endless reservoir.

This means that our conceptual toolbox, still reliant on these once effective distinctions between humans, nature and artefacts, needs to adapt to this new reality, where these distinctions no longer exist. What impact does this have on policy making in the ethical domain? What impact does it have on the framing of the sustainability challenge in a prospective way?

3.3 The Reversal from Scarcity to Abundance, when it Comes to Information

The common sense vision on knowledge and information is underlined by the omniscience/omnipotence utopia. The assumption is that, if only we knew everything that there is to know, we would act perfectly, or, alternatively, that mistakes and wrong doings could be attributed to a lack of knowledge. This, again, has been challenged by some schools of thought for some time, but is now becoming commonplace. Indeed, we are orphans of the encyclopaedic ideal and subject to the new experience that the binding constraint is not our knowledge, but instead our attention capacity. Information, and even knowledge, is like what *used to be* a natural resource: plentiful. We have shifted our sense of boundlessness from natural resources (now recognized as finite quantities) to information and knowledge. Indeed, with the digital transition, there are fewer and fewer activities that do not produce a “digital shadow”. All the electronic devices we engage with (portable or not) leave a recorded trace: where we are, what we read, what we buy, not to mention the information we post about ourselves on social networks or blogs. Information is akin to natural resources of a third kind, besides the non-renewable and the renewable, we have the exponential. Instead of aiming at a global or encyclopaedic overview, we need to learn to navigate through information-saturated waters, and make sense of and value the abundance of information through data-mining and other filtering activities. This radical mental shift has consequences on our behaviours as knowers, in our collective representation of what knowledge and information are, on the link between knowledge and action (consider the veil of ignorance) and also, more concretely, on the framing of the fundamental right to privacy, as the current principles of control and data minimisation on which the privacy framework is built fail to grasp optimally the new societal concerns regarding privacy, reputation and image.

3.4 The Reversal from Entity's Primacy Over Interactions to Interactions' Primacy Over Entities

We tend to pay more attention to what entities are, or should become, and consider the interactions between them as secondary. For example, we focus on defining what the EU should be, trying to “overcome fragmentation”—as we (too) often put it—in order to construct a coherent whole. By framing the issue in this way, we consider fragmentation as a negative and, as a corollary, consider unity as superior to fragmentation. Similarly, in our framing of relations with others, we often speak in binary terms: barriers (to be lifted), or walls (to be erected), for example. Thereby, we fail to pay proper attention to the quality and healthiness of interactions and relations between entities.

We are too often inclined to think that the solution to our problems lies in greater leadership, or in upscaling power or control. In fact, sustainability rhetoric points to the need to rebalance the relationship to the self (focus on identity) with the relationship to the other (focus on interactions). Achieving both more integration and more diversity can only be done with a relaxed approach to identity and a constructive approach to otherness⁶. With the digital transition, the importance of interfaces and interoperability is central. The primacy of interactions becomes a matter of fact, and identity is to be seen as the result of all interactions, instead of as a control variable. One of the practical implications of this mental shift is to pay less attention to size, to minimise narcissist concerns, to go beyond the fragmentation diagnostic and to analyse instead how the quality and efficiency of interactions can be improved to serve the overall purpose.

4 Process and Outcome

The goal of the exercise is threefold:

1. to check whether there were similar exercises in the past, and if applicable, draw lessons from them;
2. to validate or adapt the set of issues that should be considered⁷;
3. to consider each validated issue, by giving the following account:
 - i. examine the consequences of the shifts, paying particular attention to the examples on the notion of public space and on the expectations towards public authorities.
 - ii. sketch recommendations on new issue framings with a view to enhancing the policy-grip on what sustains and reinvigorates the public space and really matters to citizens.

⁶ For an extensive presentation of this argument, please refer to Dewandre (2011).

⁷ The choice of issues proposed under section 3 is highly contingent, and should not be perceived as exhaustive nor exclusive but rather as a proposal to trigger the process.

The Onlife Group has worked over 2012 and has chosen to deliver the outcome of this process in the form of an Onlife Manifesto. Indeed, it quickly appeared in the process that although the background of each member was different, there was a strong common basis, which was worth spelling out.

The *Onlife Manifesto* is the core output of this initiative, around which all members have gathered and consider a useful piece for triggering debates.

As may be easily understood, agreeing on a common engaging text has not been an easy task for such a multidisciplinary group! In order to enable each member to position him or herself relatively to the Manifesto, each contributor had the possibility to write *Commentaries* on the Manifesto. This generated a cloud of nuances and unveils the multiple perspectives under which this text can be read and understood.

Finally, each member wrapped up in a *Chapter* his or her contribution to the debate.

As suggested by the flower on the webpage, the Manifesto, the Commentaries and the Chapters form an output, which reflects both a strong common ground and a rich diversity. We hope that this material will be helpful and perhaps inspiring.

The outcome of this process will be the beginning of a wider discussion, both in meetings and through *Futurium*. *Futurium* is a vital tool aimed at encouraging participation from a wide range of actors, providing an open and interactive space for an inclusive thinking process. Participation from civil society groups, ICT professionals, and any individual who wish to join the debate is encouraged. Those interested in hosting workshops to discuss this outcome are invited to send in proposals addressed to nicole.dewandre@ec.europa.eu.

Keeping the initiative moving and focused has been ensured by Luciano Floridi, Professor of Philosophy and Ethics of Information at the University of Oxford, Senior Research Fellow at the Oxford Internet Institute, and Fellow of St Cross College, Oxford; Charles Ess, Professor in Media Studies, Department of Media and Communication, University of Oslo; and Nicole Dewandre, advisor on societal issues at the Directorate General Communications Networks, Content, and Technology, of the European Commission, respectively chair, editor, and rapporteur. At the same time, this would not have been possible without the remarkable engagement of all members, nor with the most efficient support of Roua Abbas, Igor Caldeira, and Nicole Zwaaneveld.

This initiative⁸ is part of the *Digital Futures* project.

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⁸ The content of this initiative does not reflect the official opinion of the European Union. Responsibility for the information and views expressed therein lies entirely with the members of the Onlife group.

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Part IV
Hyperconnectivity

Hyperhistory and the Philosophy of Information Policies

Luciano Floridi

1 Hyperhistory

More people are alive today than ever before in the evolution of humanity. And more of us live longer and better today than ever before. To a large measure, we owe this to our technologies, at least insofar as we develop and use them intelligently, peacefully, and sustainably.

Sometimes, we may forget how much we owe to flints and wheels, to sparks and ploughs, to engines and satellites. We are reminded of such deep technological debt when we divide human life into prehistory and history. That significant threshold is there to acknowledge that it was the invention and development of information and communication technologies (ICTs) that made all the difference between who we were and who we are. It is only when the lessons learnt by past generations began to evolve in a Lamarckian rather than a Darwinian way that humanity entered into history.

History has lasted 6,000 years, since it began with the invention of writing in the fourth millennium BC. During this relatively short time, ICTs have provided the *recording* and *transmitting* infrastructure that made the escalation of other technologies possible, with the direct consequence of furthering our dependence on more and more layers of technologies. ICTs became mature in the few centuries between Guttenberg and Turing. Today, we are experiencing a radical transformation in our ICTs that could prove equally significant, for we have started drawing a new threshold between history and a new age, which may be aptly called *hyperhistory* (Fig. 1). Let me explain.

Prehistory and history work like adverbs: they tell us *how* people live, not *when* or *where*. From this perspective, human societies currently stretch across three ages, as ways of living. According to reports about an unspecified number of uncontacted tribes in the Amazonian region (<http://www.survivalinternational.org/>), there are

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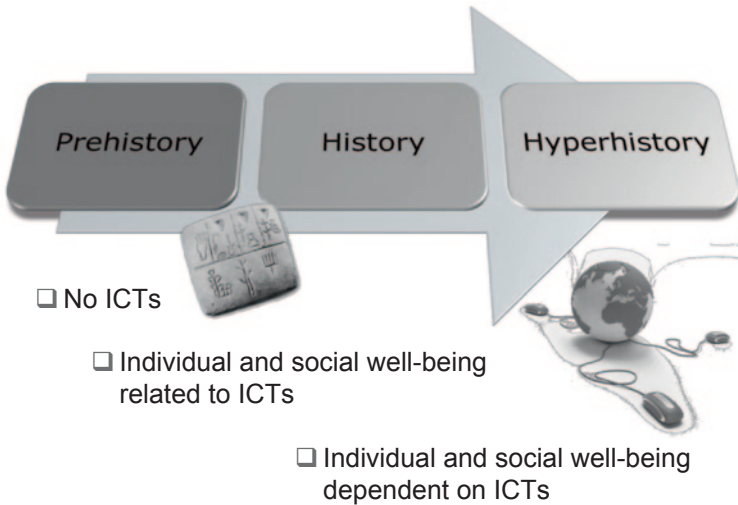


Fig. 1 From prehistory to hyperhistory

still some societies that may be living prehistorically, without recorded documents. If one day such tribes disappear, the end of the first chapter of our evolutionary book will have been written. The greatest majority of people today still live historically, in societies that rely on ICTs to *record* and *transmit* data of all kinds. In such historical societies, ICTs have not yet overtaken other technologies, especially energy-related ones, in terms of their vital importance. Then there are some people around the world who are already living hyperhistorically, in societies or environments where ICTs and their data *processing*¹ capabilities are the necessary condition for the maintenance and any further development of societal welfare, personal well-being, as well as overall flourishing. The nature of conflicts provides a sad test for the reliability of this tripartite interpretation of human evolution. Only a society that lives hyperhistorically can be vitally threatened informationally, by a cyber attack. Only those who live by the digit may die by the digit (Floridi and Taddeo forthcoming).

To summarise, human evolution may be visualised as a three-stage rocket: in prehistory, there are no ICTs; in history, there are ICTs, they *record* and *transmit* data, but human societies depend mainly on other kinds of technologies concerning primary resources and energy; in hyperhistory, there are ICTs, they record, transmit and, above all, *process* data, increasingly autonomously, and human societies become vitally dependent on them and on information as a fundamental resource. Added-value moves from being ICT-related to being ICT-dependent.

¹ This is the way I understand the reference in the Manifesto to a computational turn.

If all this is even approximately correct, the emergence from its historical age represents one of the most significant steps taken by humanity for a very long time. It certainly opens up a vast horizon of opportunities as well as challenges, all essentially driven by the recording, transmitting, and processing powers of ICTs. From synthetic biochemistry to neuroscience, from the Internet of things to unmanned planetary explorations, from green technologies to new medical treatments, from social media to digital games, from agricultural to financial applications, from economic developments to the energy industry, our activities of discovery, invention, design, control, education, work, socialisation, entertainment, care and so forth would be not only unfeasible but unthinkable in a purely mechanical, historical context. They are all hyperhistorical in nature.

It follows that we are witnessing the outlining of a macroscopic scenario in which an exponential growth of new inventions, applications, and solutions in ICTs are quickly detaching future generations from ours. Of course, this is not to say that there is no continuity, both backward and forward. *Backward*, because it is often the case that the deeper a transformation is, the longer and more widely rooted its causes are. It is only because many different forces have been building the pressure for a very long time that radical changes may happen all of a sudden, perhaps unexpectedly. It is not the last snowflake that breaks the branch of the tree. In our case, it is certainly history that begets hyperhistory. There is no ASCII without the alphabet. *Forward*, because it is most plausible that historical societies will survive for a long time in the future, not unlike the Amazonian tribes mentioned above. Despite globalisation, human societies do not parade uniformly forward, in synchronic steps.

2 The Philosophy of Information Policies

Given the unprecedented novelties that the dawn of hyperhistory is causing, it is not surprising that many of our fundamental philosophical views, so entrenched in history and above all so modern (in the sense of this word explained in the Manifesto), may need to be upgraded, if not entirely replaced. Perhaps not yet in academia, think tanks, research centres, or R&D offices, but clearly in the streets and online, there is an atmosphere of confused expectancy, of exciting, sometimes naïve, bottom-up changes in our views about (i) the world, (ii) about ourselves, (iii) about our interactions with the world and (iv) among ourselves.

These four focus points are not the result of research programmes, nor of the impact of successful grant applications. Much more realistically and powerfully, but also more confusedly and tentatively, the changes in our *Weltanschauung* are the result of our daily adjustments, intellectually and behaviourally, to a reality that is fluidly changing in front of our eyes and under our feet, exponentially and relentlessly. In the Manifesto, I described this state in terms of “building the raft while swimming”, hacking Neurath’s famous analogy. We are finding our new balance by shaping and adapting to hyperhistorical conditions that have not yet sedimented

into a mature age, and in which novelties are no longer disruptive but finally stable patterns of “more of approximately the same” (think, for example, of the car or the book industry, and the stability they have provided).

It is for this reason that the following terminology is only tentative and probably inadequate for capturing the intellectual novelty that we are facing. Our very conceptual vocabulary and our ways of making sense of the world (our semanticising processes and practices) need to be reconsidered and redesigned in order to provide us with a better grasp of our hyperhistorical age, and hence a better chance to shape it in the best way and deal with its challenges successfully. With this proviso in mind, it seems clear that a new philosophy of history, which tries to make sense of our age as the end of history and the beginning of hyperhistory, invites the development of (see the four points above) (i) a new philosophy of nature, (ii) a new philosophical anthropology, (iii) a synthetic e-nvironmentalism as a bridge between us and the world, and (iv) a new philosophy of politics among us.

In other contexts, I have argued that such an invitation amounts to a request for a new philosophy of information that can work at 360 degrees on our hyperhistorical condition (Floridi 2011). I have sought to develop a philosophy of nature in terms of a philosophy of the infosphere (Floridi 2003), and a philosophical anthropology in terms of a fourth revolution in our self-understanding—after the Copernican, the Darwinian, and Freudian ones—that re-interprets humans as informational organisms living and interacting with other informational agents in the infosphere (Floridi 2008, 2010). Finally, I have suggested that an expansion of environmental ethics to all environments—including those that are artificial, digital or synthetic—should be based on an information ethics for the whole infosphere (Floridi forthcoming). What I have not done is to outline a philosophy of politics consistent with such initial steps. The following remarks represent the beginning of this new effort.

3 Political Apoptosis: from the Historical State to the Hyperhistorical MASs

The long-term perspective, introduced in the previous section, should help to explain the process of political *apoptosis*² that we are undergoing, to borrow a concept from cell biology: the State developed by becoming more and more an Information Society, but in so doing it increasingly made itself less and less *the* main information agent, because what made the State possible and then predominant,

² Apoptosis (also known as programmed cell death) is a natural and normal form of self-destruction in which a programmed sequence of events leads to the elimination of cells. Apoptosis plays a crucial role in developing and maintaining the health of the body by eliminating cells once they become old, unnecessary, or unhealthy. I am indebted to Judith Simon for having warned me against the dangerous overtones in the concept, with its potential connection to Nazi views about biological purity and purification. Of course this is not the way the concept should be understood here, I have just been unable to find a better way of expressing the idea so far.

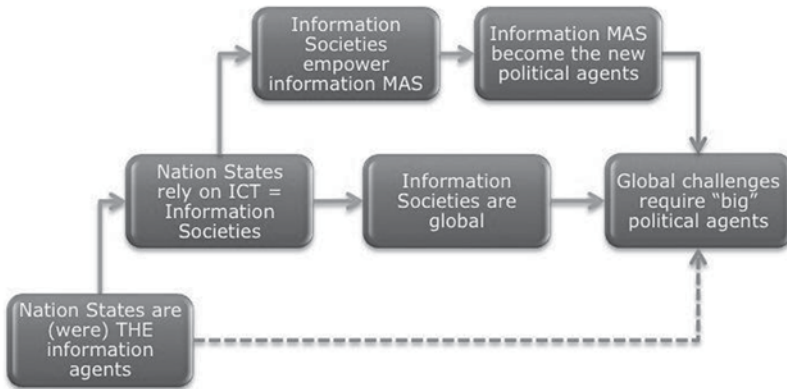


Fig. 2 From the State to the MASs

as a historical driving force in human politics, namely ICTs, is also what is now making it less central hyperhistorically, in the social, political and economic life of humanity across the world (Fig. 2). Three related reasons are worth highlighting by way of explanation.

1. *Power*: ICTs “democratise” data and the processing/controlling power over them, in the sense that both now tend to reside and multiply in a multitude of repositories and sources, thus creating and empowering a potentially boundless number of non-state agents, from the single individual to associations and groups, from macro-agents, like multinationals, to international, intergovernmental as well as nongovernmental, organisations. The State is no longer the only, and sometimes not even the main, agent in the political arena that can exercise informational power over other informational agents, in particular over (groups of) human informational organisms. The European Commission, for example, recognised the importance of such new agents in the *Cotonou Agreement*³ between the European Union (EU) and the Africa, Caribbean and Pacific (ACP) countries, by acknowledging the important role exercised by a wide range of nongovernmental development actors, and formally recognising their participation in ACP-EU development cooperation. According to Art. 6 of the *Cotonou Agreement*, such non-state actors comprise: “the private sector; economic and social partners, including trade union organisations; civil society in all its forms, according to national characteristics”.⁴ The phenomenon is generating a new tension between power and force, where power is informational and exercised through the elaboration and dissemination of norms, whereas force is physical

³ See *Second Revision of the Cotonou Agreement, Agreed Consolidated Text*, 11 March 2010. http://ec.europa.eu/development/icenter/repository/second_revision_cotonou_agreement_20100311.pdf.

⁴ I am grateful to Mireille Hildebrandt for calling my attention to this document.

and exercised when power fails to orient the behaviour of the relevant agents and norms need to be enforced.

2. *Space*: ICTs de-territorialise human experience. They have made regional borders porous or in some cases entirely irrelevant. They have also created, and are exponentially expanding, regions of the infosphere where an increasing number of agents (not only people, see above) operate and spend more and more time. Such regions are intrinsically stateless. This is generating a new tension between geo-politics, which is global and non-territorial, and the Nation State, which still defines its identity and political legitimacy in terms of a sovereign territorial unit, as a Country.
3. *Organisation*: ICTs fluidify the topology of politics. ICTs do not merely enable but actually promote the agile, temporary and timely aggregation, disaggregation and re-aggregation of distributed (Floridi forthcoming) groups around shared interests across old, rigid boundaries, represented by social classes, political parties, ethnicity, language barriers, and so forth. This is generating a new tensions between the Nation State, still understood as a major organisational institution, yet no longer monolithic but increasingly morphing into a multiagent system itself (see below), and a variety of equally powerful, indeed sometimes even more politically influential (with respect to the old Nation State) and powerful (see above), non-State organisations. The debate on direct democracy is thus reshaped. We used to think that it was about how the Nation State could re-organise itself internally, by designing rules and having the means to promote forms of democracy in which citizens could vote on policy initiatives directly almost in real time. We thought of it as a complementary alternative to forms of representative democracy. The reality is that direct democracy has become a mediated democracy, in which multiagent systems (understood as distributed groups temporary and timely aggregated around shared interests) have multiplied and become sources of influence external to the Nation State. Citizens vote for their representatives and influence them via opinion polls.

Because of 1–3, the unique position of the historical State as *the* information agent is being undermined from below and overridden from above by the emergence of multiagent systems or MASSs, which have the data, the power (and sometimes even the force, as in the case of cyber threats), the space, and the organisational flexibility to erode its political clout, steal its authority and, in the long run, make it redundant in contexts where it was once the only or the predominant informational agent. The recent Greek crisis and the actual agents involved in its management offer a good template: the Greek Government and the Greek State had to interact “above” with the EU, the European Central Bank, the IMF, the rating agencies, and so forth, and “below” with the Greek mass media and the people in Syntagma square, the financial markets and international investors, German public opinion, and so forth.

A much more networked idea of political interactions makes possible a degree of tolerance towards, and indeed feasibility of, localisms, separatisms, as well as movements and parties favouring autonomy or independence that would have been inconceivable in Modern times. From Padania (Italy) to Catalonia (Spain), from Scotland (Great Britain) to Bavaria (Germany), one is reminded that almost

in any European country, for example, hyperhistorical trends may resemble pre-Westphalian equilibria.⁵

Of course, the historical State is not giving up its role without a fight. In many contexts, it is trying to reclaim its primacy as the information super-agent governing the political life of the society that it organises. In some cases, the attempt is blatant: Labour Government's failed plan to introduce compulsory ID in the UK⁶ should be read from this perspective. In many cases, it is "historical resistance" by stealth, as when an information society—defined by the essential role played by intellectual, intangible assets (knowledge-based economy), information-intensive services (business and property services, finance and insurance), and public sectors (especially education, public administration and health care)—is largely run by the State, which simply maintains its role of major informational agent no longer just legally, on the basis of its power over legislation and its implementation, but now also economically, on the basis of its power over the majority of information-based jobs. The intrusive presence of so-called State Capitalism with its SOE (State Owned Enterprises) all over the world and especially in China is an obvious symptom.

Similar forms of resistance seem only able to delay the inevitable rise of political MASs. Unfortunately, they may involve huge risks, not only locally, but also globally. Paradoxically, while humanity is moving into a hyperhistorical age, the world is witnessing the rise of China, currently a most "historical" Sovereign State, and the decline of the US, a Sovereign State that more than any other superpower in the past already had a hyperhistorical vocation in its federal organisation. This is risky, because the anachronistic historicism of some of China's policies and humanity's growing hyperhistoricism are heading towards a confrontation. It may not be a conflict, but hyperhistory is a force whose time has come, and while it seems very likely that it will be the Chinese State that will emerge deeply transformed, one can only hope that the inevitable friction will be as painless and peaceful as possible. The previous conclusion holds true for the historical State in general: in the future, we shall see the political MASs acquire increasing prominence, with the State itself progressively abandoning its resistance to hyperhistorical changes and evolving into a MAS itself. Good examples are provided by devolution or the growing trend in making central banks, like the Bank of England or the European Central Bank, independent, public organisations.

4 The Nature and Problems of the Political MAS

The time has come to consider the nature of the political MAS more closely and some of the questions that its emergence is already posing.

⁵ The entry on "List of active separatist movements in Europe" in Wikipedia is both informative and eye opening. http://en.wikipedia.org/wiki/List_of_active_separatist_movements_in_Europe.

⁶ The Labour Government introduced the first Identity Cards Bill in November 2004, after several intermediary stages, the Identity Cards Act was finally repealed by the Identity Documents Act 2010 on 21 January 2011.

The political MAS is a system constituted by other systems, which, as a single agent (Floridi and Sanders 2004), is

- a. *teleological*, the MAS has a purpose, or goal, which it pursues through its actions;
- b. *interactive*, the MAS and its environment can act upon each other;
- c. *autonomous*, the MAS can change its states without direct response to interaction: it can perform internal transitions to change its states. This imbues the MAS with some degree of complexity and independence from its environment; and finally
- d. *adaptable*, the MAS' interactions can change the rules by which the MAS changes its states. Adaptability ensures that the MAS learns its own mode of operation in a way that depends critically on its experience.

The political MAS is thus an *intelligent*⁷ MAS when it implements features a–d efficiently and effectively, minimising resources, wastefulness and errors while maximising the returns of its actions.

The emergence of intelligent, political MASs poses many serious questions, which can only be quickly reviewed here.

4.1 Identity and Cohesion

Throughout history, the State has dealt with the problem of establishing and maintaining its own *identity* by working on the equation between State=Nation, often through the legal means of Citizenship and the narrative rhetoric of Space (the Mother/Father Land) and Time (Story in the sense of traditions, recurrent celebrations of past Nation-building events, etc.). Consider, for example, the invention of mandatory military service during the French Revolution, its increasing popularity in modern history, but then the decreasing number of Sovereign States that still impose it nowadays. It is a sign of anachronism that, in moments of crisis, Sovereign States still give in to the temptation of fuelling nationalism. The equation between State, Nation, Citizenship and Land/Story had the further advantage of providing an answer to a second problem, that of *cohesion*, for it answered not just the question of who or what the State is, but also the question of who or what belongs to the State and hence may be subject to its norms and actions.

New political MAS cannot rely on the same solution. Indeed, they face the further problem of having to deal with the decoupling of their political identity and cohesion. The political identity of a MAS may be very strong and yet unrelated to its temporary and rather loose cohesion, as it is the case with the Tea Party movement in the US. Both the identity and cohesion of a political MAS may be rather weak, as in the international Occupy movement. Or one may recognise a strong cohesion and yet an unclear or weak political identity, as with the population of tweeting individuals and their role during the Arab Spring. Both identity and cohesion of

⁷ I am using the word 'intelligent' here in the same sense in which we find it in Artificial Intelligence, that is, as an equivalent to 'smart', when used in 'smart technologies'.

a political MAS are established and maintained through information sharing. The Land is virtualised into the region of the infosphere in which the MAS operates. So Memory (retrievable recordings) and Coherence (reliable updates) of the information flow enable a political MAS to claim some identity and some cohesion, and therefore offer a sense of belonging. But it is, above all, the fact that the boundaries between the online and offline are disappearing, the appearance of the *onlife experience*, and hence the fact that the virtual infosphere can affect politically the physical space, that reinforces the sense of the political MAS as a real agent. If *Anonymous* had only a virtual existence, its identity and cohesion would be much less strong. Deeds provide a vital counterpart to the virtual information flow to guarantee cohesion. An ontology of interactions replaces an ontology of things (Floridi 2007).

4.2 Consent

A significant consequence of the breaking up of the equation political MAS = Nation State = Citizenship = Land = Story and of the decoupling of identity and cohesion in a political MAS is that the age-old theoretical problem of how consent to be governed by a political authority arises is being turned on its head. In the historical framework of social contract theory, the presumed default position is that of a legal opt-out: there is some kind (to be specified) of *a priori*, original consent, allegedly given by any individual subject to the political State, to be governed by the latter and its laws. The problem is to understand how such consent is given and what happens when the agent opts out of it (the out-law). In the hyperhistorical framework, the expected default position is that of a social opt-in, which is exercised whenever the agent subjects itself to the political MAS conditionally, for a specific purpose. Gathering consent around specific political issues becomes a continuous process. The problem is to understand what may motivate or indeed force agents (again, not just individual human beings, but all kinds of agents) to give such consent and become engaged, and what happens when such agents, unengaged by default (note, not disengaged, for disengagement presupposes a previous state of engagement) prefer to stay away from the activities of the political MAS. Failing to grasp the previous transformation from historical opt-out to hyperhistorical opt-in means being less likely to understand the apparent inconsistency between the disenchantment of individuals with politics and the popularity of global movements, international mobilisations, activism, voluntarism, and other social forces with huge political implications. What is moribund is not politics *tout court*, but historical politics, that based on Parties, Classes, fixed Social Roles, and the State, which asked political legitimacy only once and spent it until revoked. The inching towards the so-called centre by parties in Liberal Democracies around the world and the “Get out the vote” strategies (GOTV a term used to describe the mobilisation of voters to ensure that those who can do vote) are evidence that engagement needs constantly renewed and expanded in order to win an election. Party (as well as Union) membership is a Modern feature that is likely to become increasingly less common.

4.3 *Social vs. Political Space*

Understanding the previous inversion of default positions means being faced by a further problem. Oversimplifying, in prehistory, the social and the political spaces overlap because, in a stateless society, there is no real difference between social and political relations and hence interactions. In history, the State seeks to maintain such co-extensiveness by occupying all the social space politically, thus establishing the primacy of the political over the social. We have seen above that this may be based on normative or economic strategies, through the exercise of power, force, control, and rule-making. In hyperhistory, the social space is the original, default space from which agents may move to (consent to) join the political space. It is not accidental that concepts such as *civil society*, *public sphere* (also in a non-Habermasian sense) and *community* become increasingly important the more we move into a hyper-historical context. The problem is to understand such social space where agents of various kinds are supposed to be interacting and give rise to the political MAS.

Each agent, as described in Sect. 4, has some degrees of freedom. By this I do not mean liberty, autonomy or self-determination, but rather, in the robotic sense, some capacities or abilities, supported by the relevant resources, to engage in specific actions for a specific purpose. To use an elementary example, a coffee machine has one degree of freedom: it can make coffee, once the right ingredients and energy are supplied. The sum of these agent's degrees of freedom are its "agency". When the agent is alone, there is of course only agency, no social let alone political space. Imagine Robinson Crusoe on his "Island of Despair". However, as soon as there is another agent (Friday on the "Island of Despair"), or indeed a group of agents (the native cannibals, the shipwrecked Spaniards, the English mutineers), agency acquires the further value of multi-agent (i.e. social) interaction: practices and then rules for coordination and constraint of the agents' degrees of freedom become essential, initially for the well-being of the agents constituting the MAS, and then for the well-being of the MAS itself. Note the shift in the level of abstraction: once the social space arises, we begin to consider the group as a group—e.g., as a community, or as a society—and the actions of the individual agents constituting it become elements that lead to the MAS' newly established degrees of freedom, or agency. The previous simple example may still help. Consider now a coffee machine and a timer: separately, they are two agents with different agency, but if they are properly joined and coordinated into a MAS, then the issuing agent has the new agency to make coffee at a set time. It is now the MAS that has a more complex capacity, and that may or may not work properly.

A social space is thus the totality of degrees of freedom of the agents one wishes to take into consideration. In history, such consideration—which is really just another level of abstraction—was largely determined by the territory and hence by a variety of forms of neighbourhood. In the example above, all the agents taken into consideration are chosen because of their relations to the same "Island of Despair". We saw that ICTs have changed all this. In hyperhistory, where to draw the line to

include, or indeed exclude, the relevant agents whose degrees of freedom constitute the social space has become increasingly a matter of at least implicit choice, when not of explicit decision. The result is that the phenomenon of distributed morality, encompassing that of distributed responsibility, is becoming more and more common (Floridi forthcoming). In either case, history or hyperhistory, what counts as a social space may be a political move. Globalisation is a de-territorialisation in this political sense.

If we now turn to the political space in which the new MASs operate, it would be a mistake to consider it a separate space, over and above the social one: both are determined by the same totality of the agents' degrees of freedom. The political space emerges when the complexity of the social space—understood in terms of number and kinds of interactions and of agents involved, and of degree of dynamic reconfiguring of both agents and interactions—requires the prevention or resolution of potential *divergences* and the coordination or collaboration about potential *convergences*. Both are crucial. And in each case more information is required, in terms of representation and deliberation about a complex multitude of degrees of freedom. The result is that the social space becomes politicised through its informatization.

4.4 *Legitimacy*

It is when the agents in the social space agree to agree on how to deal with their divergences (conflicts) and convergences that the social space acquires the political dimension to which we are so used.

Two potential mistakes await us here. One, call it Hobbesian, is to consider politics merely as the prevention of war by other means. This is not the case, because even a complex society of angels (*homo hominis agnus*) would still require politics in order to further its harmony. Convergences too need politics. Out of metaphor, politics is not just about conflicts due to the agents' exercises of their degree of freedom when pursuing their goals. It is also, or at least it should be, above all, the furthering of coordination and collaboration by means other than coercion and violence. Second, and one may call this potential mistake Rousseauian, it may seem that the political space is then just that part of the social space organised by law. In this case, the mistake is subtler. We usually associate the political space with the rules or laws that regulate it but the latter are not constitutive, by themselves, of the political space. Compare two cases in which rules determine a game. In chess, the rules do not merely constrain the game, they are the game because they do not supervene on a previous activity: rather, they are the *necessary and sufficient conditions* that determine all and only the moves that can be legally made. In football, however, the rules are *constraints* because the agents enjoy a previous and basic degree of freedom, consisting in their capacity to kick a ball with the foot in order to score a goal, which the rules are supposed to regulate. Whereas it is physically possible, but makes no sense, to place two pawns on the same square of

a chessboard, nothing impeded Maradona's 'hand of God' from scoring a goal,⁸ and that to be allowed by a referee who did not see the infringement.

Once we avoid the previous mistakes, it is easier to see that the political space is that area of the social space constrained by the agreement to agree on resolution of divergences and coordination of convergences. This leads to a further consideration, concerning the Transparent State.

5 The Transparent State

There are two senses in which the State can be transparent. Unsurprisingly, both come from ICTs and computer science, one more case in which the information revolution is changing our mental framework.

On the one hand, the State can be transparent in the sense that it moves from being a black box to being a white box. Citizens not only can see inputs and outputs, for example levels of tax revenue and public expenditure, they can also monitor how the State as a MAS works internally. This is not a novelty at all. It was a principle already popularised in the 19th century, when the State as we know it was in its infancy. However, it has become a renewed feature of contemporary politics due to the possibilities opened up by ICTs. This kind of transparency is also known as *Open Government*.

On the other hand, and this is the more innovative sense that I wish to stress in this contribution, the State can be transparent in the same sense in which a technology (e.g., an interface) is: invisible not because it is not there but because it delivers its services so efficiently, effectively, and reliably that its presence is imperceptible. When something works at its best, behind the scenes as it were, to make sure that we can operate as easily as possible, then we have a transparent system. This second sense of transparency should not be seen as a surreptitious way of introducing, with a different terminology, the concept of "Small State" or "Small Governance". On the contrary, in this second sense, the State is as transparent and as vital as the oxygen that we breathe. It strives to be the ideal butler. There is no standard terminology for this kind of transparent State that becomes perceivable only when it is absent. Perhaps one may speak of *Gentle Government*. It seems that the State can increasingly support the right sort of ethical infrastructure the more transparently (that is, openly and gently) it plays the negotiating game through which it takes care of the *res publica*.

⁸ In Argentina v England (1986 FIFA World Cup), Maradona scored a goal by using his hand. "The ball went into the goal. Referee Ali Bin Nasser of Tunisia did not see the infringement and allowed the goal, much to the chagrin of the English players and management", [http://en.wikipedia.org/wiki/Argentina_v_England_\(1986_FIFA_World_Cup\)#.22Hand_of_God.22_goal](http://en.wikipedia.org/wiki/Argentina_v_England_(1986_FIFA_World_Cup)#.22Hand_of_God.22_goal)

6 Conclusion

Six thousand years ago, a generation of humans witnessed the invention of writing and the emergence of the State. This is not accidental. Prehistoric societies are both ICT-less and stateless. The State is a typical historical phenomenon. It emerges when human groups stop living in small communities a hand-to-mouth existence and begin to live a mouth-to-hand one, in which large communities become political societies, with division of labour and specialised roles, organised under some form of government, which manages resources through the control of ICTs. From taxes to legislation, from the administration of justice to military force, from census to social infrastructure, the State is the ultimate information agent and so history is the age of the State.

Almost halfway between the beginning of history and now, Plato was still trying to make sense of both radical changes: the encoding of memories through written symbols and the symbiotic interactions between individual and *polis*–State. In 50 years, our grandchildren may look at us as the last of the historical, State-run generations, not so differently from the way we look at the Amazonian tribes, as the last of the prehistorical, stateless societies. It may take a long while before we shall come to understand in full such transformations, but it is time to start working on it.⁹

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⁹ Many thanks to Massimo Durante, Charles Ess, and Ugo Pagallo for their many valuable comments on previous drafts of this chapter.

Views and Examples on Hyper-Connectivity

Jean-Gabriel Ganascia

1 Preliminary

There can be no doubt that the information and communication technologies (ICT) deeply impact the human society. The difficulty in appraising their effect and anticipating the concomitant changes lies in the depth of that impact. In an attempt to understand the present evolutions, we propose to uncover the underlying structure of this new world by revisiting its dependencies on the *hyper-connectivity* on which it is grounded, and the consequences of this hyper-connectivity, in modifying profoundly the network of inter-individual relations. Where we used to have ten to fifty close friends living near us, with whom we shared convivial relations, we may now have hundreds of acquaintances living on other continents, with whom we currently exchange specialized information about our main fields of interest that can be professional, artistic or related to any kind of hobby. It naturally follows from these major changes in the scale and nature of individual relationships, that the social fabric is dramatically evolving. Therefore, to quote Aristotle, since “man is by nature a social animal,” humanity is changing because society is changing. But, how are humans and society changing? And, what does it mean to be human, in this new society? These are the questions we would like to address.

Besides, the hyper-connected world is also a world of *hyper-memorability*, where all the information is stored in huge databases and accessible anytime from anywhere, without any oblivion. And, it is a world of *hyper-reproducibility* and *hyper-diffusibility*, where all the knowledge, and more generally, all the works of the mind, i.e. all the music, all the paintings, all the movies, etc. can be freely and massively reproduced and diffused. So, both the way in which individuals access knowledge and their internal memories are deeply modified, which transforms human cognitive abilities.

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However, we think that hyper-connectivity is the main factor of change, which means that, even if we face huge individual cognitive transformations, this will have far less influence on society than network connectivity. Our chapter investigates this point by referring to some concrete examples. More precisely, it first shows that the analysis of social networks cannot be reduced to a study of the topology of connections, but has to take into account the processes and their reciprocal dependences, e.g. their synchronicity or precedence relations. Then, it analyses the nature of present transformations on three examples that refer respectively to the change in our access to knowledge, to the change in the solidarity and assistance between people and, thirdly, to the status and nature of artistic work. In each case, the network influences power relationships. Old well-established authorities are questioned while new forms of domination emerge.

In other words, next to the three traditional Kantian questions, “What can I know?”, “What ought I to do?” and “What may I hope?”, we would like to answer three current questions, “How can I know now?”, “How ought I to do, now?” and “How may I hope, now?”, where “how” refers ways in which things are done and, more precisely, to the power relationships which make things possible or impossible.

We deal with the first question by studying the way common knowledge is built in a collaborative encyclopedia, namely Wikipedia, which greatly leverages on the properties of hyper-connectivity of the network. Note that, with modern computers and telecommunication networks, the role and the status of experiments are changing, which contributes to an epistemological breakthrough (Ganascia 2008) and therefore on the construction of knowledge. However, what we are interested in here is not the way new knowledge is built by scientists, but the way common knowledge is disseminated to the whole society when traditional authorities are no longer valid.

The second question is illustrated by a very particular example, which is the surprising evolution of patients’ associations with improvements in communication technologies. It clearly illustrates the new forms of solidarity that emerge in a networked society. Lastly, we deal with social recognition, which is the ultimate hope of humans, in a society where the abundance of information blurs the contributions and merits of all kinds.

2 G-rid Democracy

2.1 *Evolution of the Social Fabric*

With the development of communication technologies, the interlacing of inter-individual relationships has become progressively intricate and difficult to comprehend. During thousands of years relationships have been mainly hierarchically structured by families or tribes, and more or less anchored on territory.

The invention of scripture, horse transportation, printing techniques, the compass, the triangular sail, steam machines, the telegraph, the radio, the telephone and now the web have each contributed to the extension of human interactions into wider spaces (Poe 2011). Authority relations have expanded in scope from family, group, tribe and city to kingdom, nation, empire, continents, etc. And communication tools played a central role in these political transformations. In parallel with the extension of the scope of social interactions, societies have often admitted simultaneously different powers, e.g. temporal versus spiritual, local versus global, corporate versus central, etc., concomitance of which has been facilitated by the development of communication technologies. For instance, printing techniques played an important role in the dissemination of ideas, which contributed to the rise of Protestantism. In the same vein, the decreasing cost of paper and the industrialization of print processes in the nineteenth century allowed the emergence of a broad audience popular press.

Here, we attempt to draw a parallel between the social fabric, which results from the interlacing of individual relationships, and distributed computing. More precisely, to record the structure of modern societies, we refer to the topology of computer networks and the architecture of parallel machines. We hope that this will help us see the “OnLife” human condition from a new and fruitful angle and that this could also help to clarify the notion of hyper-connectivity, referred to above.

2.2 Diffusion Modes

It appears obvious that the connections between humans depend on their ability to exchange information and the way they communicate, both greatly affected by the development of ICTs. Classically, telecommunication engineers distinguish different modes of diffusion: *unicast*, where the exchange of information comes from one point—the sender—to one another—the receiver—, *broadcast*, where one point—the sender—sends simultaneously to all other points, and the *multicast*, where the information is distributed from one point to a selected set of receivers. Those modes can easily be reused to qualify human communications, which can be assimilated either to inter-individual, i.e. to unicast, or to collective exchanges, i.e. multicast. However, natural communications do not allow exchange from one person to all, that is to say, in technical terms, to broadcast information. It is only with mass media, at the end of the nineteenth century, i.e. with the development of newspaper, and, the twentieth, with radio and with television, that broadcasting took off.

Note that, in addition to these different modes of diffusion, which define different logics of communication, spatial proximity plays an important role, or more precisely, played a crucial role during thousands of years while, today, with electronic communications, it plays no role at all. More precisely, technological enhancements considerably increase the scope and the speed of information exchanges, ultimately making all the communications quasi-instantaneous on the surface of the earth.

Lastly, there are multiple communication networks that may coexist simultaneously, which does not mean that everybody has access to all of these networks. Indeed, for different reason related for instance to physical proximity, the language used, the necessary equipment, etc. between networks are barriers that are difficult to cross. However, with the Internet this multiplicity of co-existing networks tends to be reduced. To illustrate this, let us remind ourselves that the word Internet is an abbreviation of the inter-network locution, which means that this network originally constituted an attempt to connect all previous existing networks.

2.3 *Network Topology*

The network topology corresponds to the arrangement of nodes through connections, i.e. to the structure of the network. It may be highly or weakly connected and more or less centralized, which corresponds to different shapes. Among the most current forms, we can include rings, stars, buses, hierarchies, trees, mesh networks, partially or totally connected graphs, etc. In addition to the shape, cardinality, i.e. the size, and the degree of nodes, characterize the network. The shape depends heavily on the mode of diffusion. For instance, unicast gives birth to topologies like rings, while broadcast facilitates the emergence of stars and multicast generates hierarchies. It also appears clear that the two last network characteristics, i.e. cardinality and the degree of the nodes, are strongly influenced by the development of technologies, which considerably increase the number of people to whom each one can be connected.

The topology certainly impacts power relations, which, in turn, influence political forms in a way that is not yet fully understood. For instance, writing was invented in Mesopotamia for the sake of the Royal administration, which hoped to centralize information. By the turn of the eighteenth century, the development of printing techniques and public postal services based on modern transportation (mail coach and railways) contributed to the creation of hierarchically organized networks that have enforced the power of administrations. The development of broadcasted mass media in the twentieth century with radio, movies and television, helped totalitarian regimes to prevail using propaganda. However, writing was not only used by the central power in Mesopotamia and poets very soon took advantage of writing to play with words and signs (Glassner 2000). Moreover, in the twentieth century, the sole purpose of broadcast was not to enable totalitarian regimes to enforce their power over individuals.

Today, the web constitutes a fully connected network that covers the entire planet. Its topology is studied by a new network science that tries to understand the properties of big graphs. Besides the size of this network and its “Deterritorialization” (i.e. the fact that connections are independent of land), the mode of diffusion of the Internet, that is mainly unicast and multicast—in contrast with mass media, essentially broadcast—greatly transforms the shape of the network, breaking classical well-ordered topologies like stars, rings or hierarchies, to become a huge meshed network.

The web will certainly affect political forms; some people claim that it will give birth to a new participative democracy, under which the influence of the nation is diminished or where sovereignty no longer stands. Nevertheless, the recent emergence of populism in Europe shows the weakness of these assumptions. It goes the same, with the reinforcement of traditional Islamic parties after the Arab Spring, in Middle East and in many Arab countries (e.g. in Egypt, Libya, etc.) where authoritarian regimes have been overthrown. To conclude, we cannot extrapolate the exact nature of transformation from an analysis of the topology of the network, neither can we use it to further characterize the state of society as, in itself, the topology is static and consequently does not reflect social processes and the part they play in evolution of society.

2.4 *Institutions as Processors*

To approach the social dynamic, I propose to refer to institutions viewed as relatively stable formal social structures that are intended to play a role in society. This definition of institutions is sufficiently vague to be discussed, but the purpose here is not to give a precise account of this concept. We just want to examine the social structures in charge of coordinating human activities such as family, school, university, police, justice, etc. Each of those institutions has a function, for instance, the family is concerned with reproduction, the school with education, the police with repression, justice with the punishment of law infringement, etc. To achieve these functions, institutions can be viewed as processors that have tasks at their disposal. For instance, schools provide teaching, justice considers breaches to the law and puts people in jail or makes them pay fines, the police arrest criminals, etc.

In ancient times, when people were grouped in tribes, cities or small kingdoms, decisions were centralized in a unique place, the agora, the senate or the monarch's palace. Using a computer metaphor, we can then assimilate institutions to single processors, eventually to multi-task processors, when the same institution, for instance the agora, has different functions.

However, with the geographical extension of political entities, the increasing number of people and the multiplication of tasks, institutions cannot work undivided in one place. They need to split and work in parallel. Therefore, it is possible to analyze institutions as parallel processors.

2.5 *Parallel Computing*

Before going into the detail of the analysis of institutions as parallel processors, let us remind ourselves that people classically distinguish data flow and instruction flow, both of which can be single or multiple. This gives birth to four possibilities that are, SISD (single instruction, single data), SIMD (single instruction, multiple data), MISD (multiple instructions, single data) and MIMD (multiple instructions, multiple data). Further, along with grid computation, has recently appeared the possibility to distribute computation on myriads of distant processors that are available through the Internet.

As previously said, classical institutions can be assimilated to SISD, since they work as a central processor, but, as soon as the task becomes complex, assemblies tend to divide in specialized commissions and working groups. In the latter case, the institution can be viewed as MISD, because different algorithms, based on different background knowledge, work in parallel on the same set of data.

It may happen that some institutions have to apply the same procedures on different data, which corresponds to the SIMD architecture. This is obviously the case with schools having to teach the same things to different pupils organized into different classes. It's also the case with justice, which has to judge all violations of law with the same rules.

Lastly, some modern institutions can accept simultaneously multiple instructions and multiple data (MIMD). However, whatever processor architecture corresponds to institutions, it is usually well ordered in a way that prevents conflicts.

2.6 Grid Computation and Modern Democracy

As previously said, due to the many computers connected on Internet, it is now possible to distribute computations to all distant processors available through the web. This corresponds to the grid computation, mentioned above, which allows freely sharing of heterogeneous and delocalized resources.

With the Internet, traditional institutions, and especially democratic institutions that contribute to government, for instance assemblies, voting, etc. tend to be highly transformed. The notion of political representation, which has been rendered necessary because of the difficulties to communicate, tends, more and more often, to be substituted by stakeholders, which can be non-governmental organizations, private societies, associations, etc. As a consequence, the general architecture that corresponds to the new social landscape is no longer hierarchical, neither circular nor "starred", but meshed, because connections are more or less randomly created between institutions, as required, no longer with geographical, moral or legal constraints.

Besides this meshed topology, institutions perform tasks on demand, according to their own agenda and to their availability. This results in a totally distributed and delocalized scenery, corresponding to the grid computation model. Put otherwise, the general model on which democracy is based is no longer a centralized democracy as in Ancient Greece, with institutions like the agora. Neither is it a representative democracy based on the legal institutions of the Modern Age with assemblies, voting, constitutions etc. It corresponds to a new form of democracy that we shall call "Grid Democracy," because its structure reflects grid computation architecture, i.e. a meshed topology and a distributed and delocalized decision processes.

2.7 G-rid Democracy

To conclude, let us recall that computer scientists know that changing machine architecture requires changing the algorithms. The introduction of parallel computation

forces us to rethink the processes that solve tasks, according to the type of parallelism used (SISD, MISD, ...). Sometimes, this may lead to very efficient solutions, but not always; in any case, whatever happens, we need to totally rewrite the programs according to the type of parallelism that is implemented.

It seems to be the same with “grid democracy”: the procedures that democratic institutions implement, like voting, decisions, public consultation, etc. need to be re-thought and rewritten. In a way, this appears to be very positive, because the old hierarchies and traditional authoritarian relations seem to disappear, which means that with “grid democracy” the democracy gets rid of ancient and cumbersome constraints. But, in this way, democracy also gets rid of many traditional democratic institutions and the fear is that this might lead to democracy itself being got rid of.

3 Wikipedia, a Realized Utopia

3.1 Evolution of the Editorial Governance

With the development of ICTs, the physical constraints related to the production and reading of books were significantly reduced. Very soon, many rejoiced in the new possibilities that seemed to be opening. They saw a great flexibility in the development and updating of encyclopedias and their consultation. They also saw the possibility to greatly reduce manufacturing and distribution costs, since it was no longer necessary to resort to printing on paper. Very early, some hoped to exploit these techniques to transform the validation procedures and to have the reader play a more important role in the creation of encyclopedias. Some even imagined that everybody would be able to freely contribute to the content of encyclopedias.

More precisely, the structure of the Internet allows readers to participate in the writing process by giving their opinion and by initiating or modifying articles. Readers become writers and may decide for themselves the items they want. The role of publishers is then transformed: they don't create order any more. They arbitrate conflicts between authors/writers and ensure that the basic rules of ethics, for instance the rule of neutrality, are respected.

This has resulted in new forms of editorial governance for encyclopedic corpora characterized by a reversal, more or less extensive, of the social hierarchy for the administration of these projects. This text gives an account of the governance of some of encyclopedic editorial projects, notably that of Wikipedia.

Note that in the beginning, many of the well-informed specialists thought that it was impossible to make the reader a writer. For instance, I organized a working group in 1995 on the evolution of books (Ganascia 1995). While some had suggested the possibility, with the web, of building an open encyclopedia, the most eminent specialist in this group, Sylvain Auroux, a famous linguist and editor of many collective books and encyclopedias, affirmed that an encyclopedia needs a closure. What is interesting with the Wikipedia project is that it has denied such

authoritarian claims. However, as we shall see, it substitutes a new social organization for the old one, which is interesting to analyze.

3.2 Traditional Governance of Editorial Projects

To understand what has happened, let us first recall that the word “encyclopedia” comes etymologically from “cycle”: an encyclopedia aims to surround and to enclose all the human knowledge at a given time. To this end, use is made of the best specialists in all the fields of knowledge. The Encyclopedia of Diderot and d’Alembert, in the eighteenth century, is quite illustrative of this idea: it has resorted to 160 contributors, with various training and jobs. Together they wrote 72,000 articles.

To implement such a project, a rigorous organization had been erected. The Encyclopedists have distinguished three functions between which they established a strict hierarchy:

- Publisher: responsible for recruiting authors, ordering and monitoring their work,
- Authors, appointed and controlled by the publishers and
- Readers, who were neither supposed to contribute, nor participate in any way to the making of the encyclopedia.

The publishers ordered the authors to write articles on pre-specified topics. The authors made their copy under the authority of publishers and had to revise their contribution according to the publishers’ comments. Finally, the readers were happy to get the finished product, without intervening at any time in its realization.

3.3 Facilities Induced by ICTs

With the introduction of ICTs, many technical constraints that had influenced the realization of traditional encyclopedias were lifted. Briefly speaking, below are some of these disappearing constraints.

1. It is no longer necessary to print an encyclopedia for broadcast.
2. Since there is no mass printing, the cost of distributing the encyclopedia is extremely small, ultimately becoming quasi-negligible.
3. The encyclopedia is accessible anytime, anywhere, without any routing problem. As a result, the potential audience is vast, since all humans who read the language in which the encyclopedia is written are likely to use it.
4. With the point-to-point communication, readers can easily send comments and exchange on the articles they read. They can also rewrite them.

These four points have two major consequences:

1. Since the cost of production and distribution are virtually nil we can easily multiply versions, to the point of making local changes whenever it seems appropriate, without waiting for a global revision. Nothing prohibits a permanent rewriting or even a continuous writing of the encyclopedia.
2. Since readers can send their comments, nothing prevents us to take advantage of their contributions and—why not?—to offer them the opportunity to write articles and become authors.

All of this leads to evolve the classical triad “author—publisher—reader” (Ganasia and Lebrave 2002). The results of these changes have brought about new modes of governance for the editorial process. However, technology is not deterministic: it does not induce a single mode of governance; several online encyclopedic editorial organizations coexist today. Not to extend the text of this contribution too far, we restrict ourselves here to the depiction of the governance model for Wikipedia, but there are many others (de Laat 2011).

3.4 *Wikipedia Editorial Governance*

The Wikipedia model was developed from 2001. It has totally changed the game by claiming to refuse any social hierarchy and any form of stratification.

To assess the impact of this model, it is difficult to speak of success or achievement, because it is a massive social phenomenon.

The numbers speak for themselves: more than 4 million articles in English (September 2012), over 22 million articles in 285 languages, 77,000 active contributors and some 470 million visitors per month (February 2012).

Behind this surprising success, there is a social project. The designers of this encyclopedia purport to create a new form of democracy based on a model of self-organization completed by a few basic ethical principles, for example, the requirement of neutrality and the prohibition on intervention in an article on an issue that concerns us directly.

More precisely, the encyclopedia Wikipedia involves different categories of actors that perform different function, but between which it claims not to establish any hierarchy, rather just regulations or rules:

- Jimmy Wales, nominally in a position of ultimate authority,
- The arbitration committee (15–18 members)
- The “Bureaucrats” (34)
- The Administrators (700 vicinity),

Note that administrators, “bureaucrats”, and Arbitration Committee shall ensure that the principles of the encyclopedia are respected. They do not intervene in the article contents.

- Thematic editors (elected—70–80% acceptance rate), these support items they monitor developments
- Contributors (77,000 registered)
- Registered readers who vote,
- Visitors (15 million visits per day in February 2012), finally,
- Bots (i.e. intelligent artificial agents) that automatically correct spelling errors, syntax or presentation items.

This organizational structure is completed by oversight mechanisms. Through them, specialized editors examine the corrections of the items they support so as to locate abnormal activities, which are mainly recurring corrections on the same items. This helps to fight against what the developers of this encyclopedia use to call “vandalism” and which consists, for the most part, in large corporations or associations altering articles that concern them in order to improve their image.

So regularly there are representatives of institutions, corporations, political parties or philosophical positions (e.g. creationists), who attempt to correct articles on themselves more or less directly, which goes against the principle of neutrality on which Wikipedia relies. Considered inconsistent with the basic ethical rules, such behaviors are strictly condemned. Users considered as guilty are no longer allowed access to the encyclopedia. More precisely, they can continue to consult the encyclopedia, but are not able to edit and to modify articles related to their business.

3.5 *An Unexpected Success*

In conclusion, let us first recall that the success of Wikipedia was very unexpected. Before Wikipedia, the models of collaborative encyclopedias, which were based on free and spontaneous public contributions, surprised most of the experts in encyclopedia publishing. For them, it was more of a naive utopian view than a possible reality.

As a consequence of the success of the new models, it seems that old models, based on respect for skills and knowledge, are at risk of disappearing. Moreover, the new models, especially the one that Wikipedia represents, raise many questions about the status of knowledge in society, its financing and control, and on those who can and must exercise control. In this regard, there is concern that low-skilled groups, groups funded by governments or private pressure groups outweigh experts. Or, conversely, that the rules too strictly applied restrict the freedom of authors.

Regardless of these issues on the new status of knowledge in society, we have here a concrete example of a modern model of governance brought about by the development of ICTs. This model of governance is interesting by itself. But it could also be generalized to other online institutions.

4 Fortunes and Misfortunes of Patients' Associations

4.1 Preliminary

The previous section consisted of a description of the Wikipedia encyclopedia, a concrete illustration of a new type of utopia realized thanks to the use of information technology. This new section confronts ideas from May 1968, a period propitious to generous social utopias, to the current evolution of the society. We consider here another concrete illustration that is focused not on the editorial process, as in the case of Wikipedia, but on the evolution of the health system and its organization, in particular on the evolution of patients' associations. It illustrates how solidarity relationships can subsist on the networked society and how some people promote new principles of ethics.

4.2 Brief Historical Recall

Less than half a century ago, in almost all western countries as in the socialist world and the developing nations, social roles were well-defined: the teachers were there to teach, the physician to cure, the police to ensure public order, the politicians to govern, etc. During May 1968 in many developed states of Europe and in the United States of America, the young generation contested the legitimacy of the traditional social roles and the genuineness of all kinds of authority. The power of the police, the judges, the doctors, the professors etc. was questioned and debated. In the years that followed, society was traversed by attempts to change the social fabric, in a way that has led to a decrease in the power of traditional authorities.

The development of computer networks originated at the same time, in the late sixties, with ARPANET, which was supported by the DARPA (Defense Advanced Research Projects Agency). There was no direct connection between the militaries who had funded ARPANET and the political activists at the origin of the events of 1968. Nevertheless, a few years later, in the seventies and in the eighties, people, who had been strongly influenced by the ideas of May 1968 in their young age, greatly contributed to the development of computer and network technologies (Lyotard 1984). In particular, some of them initiated the free software movement, the purpose of which was to institute a new economical order based on a social utopia that was characteristic of that period (Turner 2006).

There naturally follows from these considerations a question about the very nature and the origin of the *OnLife* society, i.e. about of the society that is shaped by the information and communication technologies and, more specifically, by the web: Does the structure of this society correspond to the spirit of free movements of May 1968? Or is it fundamentally different, and why? In favor of the influence of May 1968, one can note that many traditional and well-established institutions seem to lose their credit. The web facilitates retroactions and interactive relations

between actors, which prohibits unidirectional influences. For instance, some applications like “rate my professor”¹, “review your lawyer”², “rateMDs” (rate Medical Doctors)³ etc. allow any student, any consumer, any patient etc. to give publicly their own evaluations of authorities. In addition, the development of cheap and light cameras⁴ and their coupling to the web enable anyone to capture and to broadcast sensitive information about authorities, for instance about a policeman who beats people on a metro platform, without the mediation of intermediaries, like journalists. As a consequence, state institutions, newspapers, media and authorities tend to lose their exclusive privileges. More generally, the dominant status of the officially stated knowledge may be publicly discredited on networks. All of this might incline us to conclude that the networked society realizes the spirit of May 1968. However, against this thesis, we note that the unbalanced power of the market has never been so important and that social solidarity and public generosity seem to decline.

To try to answer the question relevantly, we explore here the specific question of health maintenance and its recent developments. In particular, we are interested in the social organization of health systems, in the evolutions of the authority of physicians and health industries, and their influences on medical cares.

4.3 *Medical Nemesis*

As an introduction to this question, let us consider the work of a famous essayist of the seventies, Ivan Illich, who was representative of the state of the opinion during this period. He wrote many controversial books on very different topics; for instance, he brought into question the role of public education and the school (Illich 1971), the benefits of technology (Illich 1974a, 1978a, 1995), the necessity to work in (Illich 1978a, 1978b), etc. He has also denigrated the medical institution in a famous book entitled “Medical Nemesis” (Illich 1974b) where he denounced the omnipotence of medical knowledge, which was quite unusual at this time. More precisely, he said that most of the successes of which the physicians prevailed in the second half of the nineteenth and in the twentieth century were illusory, because they were not really due to modern medicine, but to social progresses, to hygiene and to the evolution of the standard of life. In contrast, he blamed the medical authorities who, according to him, were not only responsible for the induction of *iatrogenic* diseases, i.e. of diseases that result from treatments or therapies, but also of human engineering, which has led to what he called a social “iatrogenesis”, i.e. to the development of a social life and of an economy under medical control and under the domination of

¹ <http://blog.ratemyprofessors.com/>.

² [http://www.avvo.com/review-your-lawyer or](http://www.avvo.com/review-your-lawyer-or).

³ <http://www.ratemds.com/>.

⁴ As an illustration, one may mention a wearable camera named *nemoto*TM (<http://memoto.com/>), or another name *autographer*TM (<http://www.autographer.com/>) but there are many others.

the health industry. In other words, he accused the medical body of not taking into account the real needs of patients, but only their own interests.

Ivan Illich proposed a few solutions to make the social organization of health more health-serving than industry-serving. Among them, he supported the recognition of many health professions, like herbalists, masseurs or yoga instructors, against whom he called the “Professional Mafia” of physicians. He also recommended the promotion of health maintenance rather than sick-care and payment with a fixed amount per capita rather than a fee-for-service. But, the most interesting suggestion for us here was to stimulate a patient-oriented medicine, rather than a milieu-centered medicine. He then encouraged patients to organize groups for exchanging information about their diseases and how to live with the disease, and also for pressing governments to give public funds for research or industries to design new therapies, more adapted to their cases.

Then, in the seventies and the eighties, associations of patients for specific diseases, especially chronic diseases, were formed to help ill people face the consequences of their pathology by exchanging information about treatments and practical aspects of social life and sustenance. At this time, there was no web, but the patient associations took advantage of the progress of information and communication technology, especially the telephone, to help exchanges, and the radio to advertise the associations.

4.4 Forty Years Later

Forty years later, there are tens of thousands of patient associations⁵, which all use information and communication technologies to ensure their promotion, to exchange knowledge and to educate people. These associations not only help patients to get practical information about their disease and the most appropriate treatments, but they act as lobbies and stakeholders in the health domain. For instance, they press public authorities to fund specific treatments and research; they urge pharmaceutical industries to develop new drugs; they force regulators to speed up evaluation procedures to facilitate the adoption of new medications; they analyze research protocols; they expose side effects of treatments etc. The case of AIDS was particularly illustrative: very strong associations of patients forced medical, industrial and public authorities to boost research and to accelerate administrative procedures, to provide new treatments that have totally changed the outcome of the disease.

More generally, patients’ organizations take part in the negotiations between state authorities, research organizations and pharmaceutical industries. They are considered as official actors, which gives them power and recognition. In this regard, the proposition of Ivan Illich, which was to promote groups of patient to impose public control over the organization of medicine, has been granted. We could conclude

⁵ For instance, the French HAS (“Haute Autorité de la Santé”) has counted more than 14,000 associations of patients for the only France.

from this that the spirit of May 1968 won. And, undoubtedly, things have considerably changed due, in part, to the use of modern information and communication technologies, which greatly facilitates the retroaction of patient's associations in public debates and the mobilization through the network of disseminated patients, who can now exert a strong pressure in case of need.

However, recently, many people (Colombo et al. 2012; Mosconi and Colombo 2010; Rothman et al. 2011), have denounced the opacity of patient association funding, which comes partly from industries. To clarify this point, let us recall that, when a patients' organization grows up and augments its influence, it needs to employ full time administrators, who quickly establish a kind of bureaucracy, whose aims are a long way away from patients' interests: quite naturally, these administrators become mainly occupied with the influence of their organization, which justifies their employment and satisfies their personal ambitions. As a consequence, their prior concern is that their organization be considered as an essential stakeholder, and then that it be involved in the main decisions, even if this activity has no direct relationship with patients' interests and care. For instance, they want to be involved in new clinical trials and in the discussion with health care organizations about reimbursement of treatments. It may then happen that industries would secretly negotiate with patient's organizations to constitute coalitions of interests against state organizations or against physician organizations. In such cases, the patients' organizations no longer represent the interests of patients, but their own interests, which may coincide to the interests of pharmaceutical industries, because they give them funds. It follows that the current situation looks to be far away from the spirit of May 1968, even if the patients' associations oppose to the body of physicians and its domination.

4.5 The Shattering of Institutions

As already mentioned, the patient's associations take advantage of the web to increase their influence and to disseminate information to their participants. Since the web allows the direct mobilization of the people, it certainly leads patient's association to increase their influence. This is consistent with the idea that traditional institutions, like medical authorities, now need to share their influence with new actors. In the case of patients' organizations, it means that people, affected by the same disease, can now be connected throughout the web and exert a strong influence, while in the past, they would have remained isolated.

Nevertheless, with the development of the web and, in particular, with the participative web, new phenomena happen that make the official status of both patients' and physicians' organizations more difficult.

To understand the current situation, let us recall that, as previously said, as they grow up, the patients' organizations are moving away from patients' interests, towards their own interest, that is to increase their influence. Therefore, individual patients are less and less motivated by these organizations. In addition, they now become able to get information by themselves, throughout the web, and to get in

touch directly, through social networks, with other people that are affected by the same disease, with whom they can easily share their experiences. As a consequence, we observe that many patients leave patients' organizations. Paradoxically, these last are always official representatives of patients in public negotiations, although many patients are not affiliated. In other words, the patients' organizations that have become progressively recognized as official institutions shatter under the effect of the Internet that allows patients to connect and interact each other, without their mediation.

In parallel, some physicians, who are not well recognized by the official bodies of their profession, have taken advantage of the web to constitute themselves as advice givers. They promote, via medicine 2.0⁶, new approaches of medicine that allow patients themselves to take charge, by being informed about their disease and possible therapies, and by adapting their treatment to their needs, according to their own knowledge and personal choices. Without going into the details of this new medical practice, which include self-medication, i.e. the process of prescribing treatment oneself, note that it is very often opposed to institutional medicine, while meeting the needs of patients who are seeking for information on the web. Besides, it is noteworthy that today, because of access to scientific knowledge through the Internet, many patients affected by chronic diseases have a better knowledge of their pathology and of the state of the art in the care of their condition than their own medical practitioner.

It follows from this that the body of physicians, which had been forced to negotiate with different actors, after having dominated alone the whole health system for a long time, is now burst in the same way as patients' organizations. These phenomena correspond to recent, unexpected and unpredictable social change. This unpredictability renders it difficult to answer our initial question, which concerned the parallel between the recent evolution of the OnLife society and the utopia of May 1968. On the one hand, it is certain that information technologies have deeply changed society and have contributed to destroy the privileges of the old institutions like those of medical academies; on the other hand, it's not obvious that the current evolution truly corresponds the ideals of May 1968.

In conclusion, let us consider the current configuration where isolated patients are seeking information about their disease on the web, while some physicians disseminate information by themselves, without referring to the knowledge of best specialists of their domain. The two parts are obviously complementary. However, it may then happen that erroneous knowledge circulates, while authorities, even when they give correct knowledge, are discredited. That's what happened 2 years ago, when many general practitioners were opposed to the public vaccination proposed by the French government, because they were not involved in this plan. They then disseminated misleading knowledge about the danger of the vaccination through the web (Dupagne 2010), with the aim to provoke the failure of the government plan. It fast became very popular; for instance, one of these papers has been

⁶ The <http://www.doctissimo.fr/> and <http://www.atoute.org/> web sites are excellent examples of such approach of medicine. Note that Atoute.org explicitly mentions the Medicine 2.0.

downloaded more than 1.5 million times. Following this, the public vaccination plan proposed by the government completely failed because the population did not accept it. It is certain that these general practitioners played a role in this failure.

This illustrates the power of the Internet and the way it changes state policy, that is, in our case, health policy. This also shows how the Internet affects the role of authorities, in particular scientific authorities. Lastly, this provides evidence of the crucial need for networked society, where institutions and organizations tend to collapse, of an epistemic responsibility like the one that is developed by Judith Simon, to ethically condemn the dissemination of wrong knowledge, as it was the case in the case above.

5 The Digital “Aura” in a World of Abundance

5.1 *From Scarcity to Abundance*

Twenty years ago, I had a dream that was to live day and night, especially the night, in a library. Today, this dream has become a reality: we all live in a huge library, where almost all the written books of the classical literature are instantaneously accessible, by day as by night. By the way, the world of knowledge is dramatically changing. It’s becoming a world of abundance where all pieces of information are permanently at the disposal of everybody. To appreciate the amplitude of the evolution, let us have a glance into the past. Up to the end of the Middle Age, books were so expensive and so difficult to manipulate that only the happy few had access to them. In addition, this access was not permanent: it was required to be through a library or a monastery, which precluded access during travels, even for the richest. In the modern age, printing techniques allowed the reduction of cost and size of books and consequently their dissemination. However, despite these improvements in manufacturing, books were always expensive and inconvenient, which restricted their access to a small part of the population. It was only with the industrialization of the printing techniques, at the end of the nineteenth century, that the literature, the newspapers, the philosophical and scientific essays and more generally all kinds of writings have begun to broadly disseminate across all society. In parallel, the techniques of lithography, invented at the end of the eighteenth century but which have received a considerable development during the nineteenth century, considerably facilitated the reproduction of pictures, which was largely used to enrich books, newspapers and posters. Lastly, photography, invented in the second quarter of the nineteenth century, and then the phonograph and cinematography, both invented by the end of the nineteenth century, allowed progressively the automatic reproduction of pictures, sounds and movement.

Nowadays, with the development of information technologies, the movement of mechanical reproduction seems to have been considerably amplified. It is neither surprising, nor new: this had already been anticipated in the twentieth century by

thinkers like Paul Valéry in 1931 in a small text entitled “La conquête de l’ubiquité” (Valéry 1928). However, today, the quantity of available contents exceeds, far more than ever, our cognitive abilities. It results in modifications in our perception of works of the mind in general and of works of art in particular. Do these transformations simply prolong and extend the movement initiated in the nineteenth century with the mechanical reproduction or do they constitute a new qualitative step that characterizes entering into a world of abundance? That is the question we would like to discuss here.

5.2 *The Loss of the Aura*

Economical, political and aesthetic consequences of the mechanical reproduction of writing and images have had considerable effects on modern societies during the twentieth century. It is not only access to works of the mind and, in particular, to works of art that has been facilitated, but the nature of their intellectual content and the way in which they influence humans that has been transformed (Benjamin 2006). On the one hand, physical objects of art, e.g. the physical support of pictures, were becoming far less valuable because of their easy reproducibility. Therefore, what had been previously attached to unique and singular items, which because of their irreplaceability conferred on them, some magic properties, was disappearing, which made the nature of art evolve. A famous essay written by Walter Benjamin in the second quarter of the twentieth century and entitled “The Work of Art in the Age of its Technological Reproducibility” (Benjamin 2008) constituted an attempt to approach the nature of these changes. It has been very influential during the last 60 years especially, but not only, in aesthetics. According to Walter Benjamin, with the mechanical reproduction of works of arts, in particular with photography, the part of the human in the making of art was greatly reduced, because the capture no longer required the intervention of human hand, since the machine was automatically recording the light. As a consequence, works of art, which had testified to an inheritance and a tradition since the origin of mankind, both by the art techniques utilized, which required to learn gestures, and by the symbolic references attached to the contents that were almost always conventional or allegoric, have become, with these new inventions, closer to scientific investigations than to the sacred and supernatural. It follows that prosaic objects of everyday life turned more and more often to be referents of works of art. Baudelaire, who described the Paris streets, and Stéphane Mallarmé have attested this evolution in poetry (Benjamin 2006). But, it could have been possible to see many other manifestations in different arts. In addition, the reception of works of art was evolving with their massive reproducibility: it became collective and simultaneous, with photos or movies, while previously it had essentially been individual and contemplative.

A key concept proposed by Walter Benjamin to approach these transformations was the notion of aura, which he defined as “the unique phenomenon of a distance, however close it may be.” The notion of aura was also linked to the involuntary

memory (Benjamin 2006), which had been introduced by Marcel Proust and Henri Bergson (Bergson 1926) to characterize a type of remembering that is both contemplative and unconscious, and that contrasts with an intellectual and active access that is implemented in the voluntary memory.

According to Benjamin, works of art are received and valued on different planes that stand between two polar opposites; on the one, the accent is mainly put on the cult value, that is associated with the contemplation, which requires concentration; on the second, the accent is put on the exhibition value of works of art that are designed to distract the mass of spectators and that no longer demand them to be absorbed. With mechanical reproduction, the cult value of works of art that requires concentration and efforts tend to decline while the exhibition value, which distracts the mass, becomes more and more prominent. As a consequence, the aura, which is attached to the cult value and to traditions, vanishes.

This loss of the aura is not only negative. It has aesthetic consequences. New forms of art that no longer refer to traditions and that eliminate cult value are emerging among which one can note Baudelaire's poetry, Cubism or Dadaism. But it has also less positive consequences that led political regimes—especially, the twentieth century totalitarian regimes—to use new media and works of art for their propaganda. Lastly, it has economical consequences that lead works of art to focus only on the exhibition value.

5.3 *The Digital “Aura”*

As we recall, Walter Benjamin announced the loss of the aura consecutive with the mechanical reproduction of works of art. The question, then, is this: Does the development of information technology leads to a definitive and total loss of the aura? In other words, are the information technologies only the pursuit of mechanical techniques? Are they simply amplifying their effects? Or, do they introduce a rupture? In the case of the aura, the question concerns its current status: has it definitively disappeared? Or, does some form of resurgence of the aura persist?

Undoubtedly, digital technologies perfect the reproduction processes of works of art. Thanks to these, reproduction is nearly free: nowadays, it costs neither a lot of money, nor large amounts of energy, to duplicate information. We could characterize this current ease to reproduce as being a state of hyper-reproducibility by analogy to the state of hyper-conductivity for the electrical conductivity.

Furthermore, diffusion is also practically free and accessible to everybody. Currently, it becomes possible for anyone to divulge in the entire world literature, pictures or sounds without having to ask for authorization and without owning any infrastructure, except a PC. As a consequence, today information is becoming eminently diffusible almost everywhere on the surface of the earth. For instance, in 2011, during Arab spring, young students sent, with no support, videos of the public events in Tunisia or Egypt, while 20 years before, in China, or in many other authoritarian countries, it had been impossible to send images of the dramatic event

that were happening in the streets. Always by reference to the morphology of hyper-conductivity, we shall characterize this state as a hyper-diffusibility.

Lastly, any pictures and sounds can be easily captured with very cheap equipment, like a mobile phone, and then memorized on small and inexpensive electronic storage devices. As a result, and by the same way of previously, we can say that we enter in a world of hyper-memorisability.

All the techniques of reproduction, diffusion and memorization that had so greatly contributed to the disappearance of the aura have been so considerably improved that the result exceeds our cognitive abilities. As a consequence, our faculties of discernment are insufficient. The total available content cannot be consumed by the human mind, even helped by powerful machines. In other words, it is becoming more and more difficult to filter the flow of data that assails every one of us, each day, and to focus on the relevant information. Therefore, we have to make choices, to decide on which object we will focus our attention and then to select, among the many pieces of information that concern our object of interest, which ones we would prefer to explore. However, those different choices cannot be well informed, because they are anterior to our possession of knowledge. As a consequence, we choose according to some unconscious criteria that constitute a kind of halo—or a cloud—enveloping the objects and attracting our mind. Such criteria correspond to the above-mentioned involuntary memory; therefore, we call it the digital halo or the digital aura.

Note that, as we have previously shown in our work on *sousveillance* (Ganascia 2009, 2010), this digital aura becomes increasingly important because, in our world of excessive abundance of information, the power is far more often given to those who are viewed than to those who watch.

Our hypothesis here is that we can draw some parallels between this *digital halo* and Benjamin's aura. Among them, note that while the aura requires concentration, it is same with the *digital halo*. Furthermore, as we previously said, while the aura was directly related to involuntary memory, it is also the case that the digital halo is largely unconscious.

However, as we previously mentioned, for Benjamin the notion of aura was directly related to the cult value, to an attachment to traditions and to a contemplative attitude. It might seem surprising and even strange to affirm that, with the digital technologies, we adopt a contemplative attitude oriented towards traditions. To be more precise, the first hypothesis, drawing a parallel between Benjamin's aura and the digital halo, needs to be complemented by a second hypothesis that states that, while Benjamin's aura was attached to a cult value, oriented towards traditions, the digital aura is attached to a specular value, which opens on new opportunities. In other words, while the cult value was oriented towards an immemorial past, the specular value is oriented towards an accessible and free future that is full of possibilities.

This notion of digital aura in relation to a specular value would be useful to interpret many of the contemporary movements in art, especially the generative art, which cannot be evaluated with respect to their exhibition value and no longer with respect to a cult value, but only with respect to the number of possibilities that a

program can generate. It would be suitable to follow with some precise examples, which would justify the two preceding hypotheses, but this would be far in excess of this chapter.

Recall also that Benjamin's definition of the aura as "the unique phenomenon of a distance, however close it may be" could be directly applied to the *digital aura*. Nevertheless, while in the case of Benjamin's aura, close and concrete elements of works of art helped to give access, through contemplation, to a far past, anterior to what can be provided by any voluntary memory, with the digital aura, close and concrete information elements help to give access to a far future that opens on new perspectives, despite all perceived dangers and fears.

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Part V
Identity, Selfhood and Attention

The Onlife Manifesto: Philosophical Backgrounds, Media Usages, and the Futures of Democracy and Equality

Charles Ess

1 Introduction

I begin by discussing three challenges we take to define our Onlife context. I first show how these challenges have been prefigured and addressed in prior philosophical developments, including phenomenology, virtue ethics, Kantian ethics, and others. This discussion then introduces us to the primary features of and contrasts between: the more *individual* sense of rational-autonomous selfhood characteristic of high modern Western thought, and; more *relational* senses of selfhood in both historical and contemporary contexts and theories (Bakardjieva 2005).

These two notions of selfhood are further illuminated by considerations of embodiment and developments in contemporary philosophy and Internet Studies. This brings us to the core point: the shift from more individual towards more relational selves in contemporary “Western” societies, as manifest first of all in our changing practices and theories of “privacy,” risks a shift *towards* more hierarchical social structures and non-democratic polities—and thereby *away* from high modern democratic processes and norms, including equality and gender equality (Bakardjieva 2009).

I then examine how far democratic processes and norms can be nonetheless preserved Onlife, drawing on notions of hybrid selves, “partial privacy” and “contextual privacy” (Nissenbaum 2010) and “subactivism” (Bakardjieva 2009). By contrast, emerging Confucian democracies, as resting on strongly relational conceptions of selfhood, appear to directly threaten commitments to equality and gender equality.

These theoretical and empirical findings highlight the urgency of our contemporary choices regarding *media usages*. Specifically, where writing and the skills of *literacy-print* (as the communication modality of high modernity, in contrast with the *secondary orality* of electric media in general and online communication in particular) are historically correlated with high modern notions of individual

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autonomy, democracy, and equality—I plea for continued emphasis on writing as “a technology of the self” (Foucault 1988) for the sake of sustaining democracy and equality (Baron 2008).

2 The Relational Self and the Onlife Initiative: Descartes, Phenomenology, and the Analogue-Digital Age

This section shows how three of the four challenges we highlight in the Onlife Manifesto—beginning with the blurring of the distinction between reality and virtuality—have been explored, grounded, and prefigured in modern philosophy, most especially phenomenology. The material in this section thus provides important historical context and philosophical groundings for the analyses and claims of the Onlife Manifesto.

Our background paper underlined four challenges to received frameworks evoked by the digital transition:

- a. By blurring the distinction between reality and virtuality;
- b. By blurring the distinctions between human, machine and nature;
- c. By reversing from scarcity to abundance, when it comes to information;
- d. By shifting from the primacy of entities over interactions to the primacy of interactions over entities. (Broadbent et al. 2013, p. 30)

Three of these have been explored, grounded and prefigured in modern philosophy, most especially phenomenology. A brief look at how this is so may be helpful for adding both additional historical context and philosophical substance to our shared understanding.

To do so, I offer in the following

- (2.1) A brief summary of how Cartesian dualism underlies especially the hard distinction between the real and the virtual in the 1990s, and the several ways in which late 1990s work in several domains, including neuroscience, shift from Cartesian dualism;
- (2.2) Some notes on significant developments in phenomenology that prefigure and ground such non-dualistic accounts, focusing on the work of Maurice Natanson (1970) as an example, followed by brief comments on more recent philosophers who extend phenomenological analyses and directly couple these with contemporary neuroscience;
- (2.3) Summary comments that link these phenomenological backgrounds and insights to our guiding notions of “onlife” as first of all articulating just the refutation of the Cartesian-1990s’ dualism between the real and the virtual, followed by
- (2.4) Pointers to how these developments likewise prefigure and support especially “b” and “d” in our list.

2.1 *From Norbert Wiener to Enactivism and the Embedded Mind*

We first need to recall that the hard distinctions between the real and the virtual, as mapped onto equally hard distinctions between the offline and the online, especially unfolded in the relevant literatures on virtuality, virtual worlds, etc. In the 1990s,

as can be seen in numerous sources, these distinctions squarely rest on a Cartesian dualism—one that radically divorces a non-cognitive body (and with it, the whole of nature as “extended substance”) from a non-extended and thereby fully disembodied mind. As but one example: Katherine Hayles (1999, p. 288) discerned this dualism at work in the foundational discipline of cybernetics as developed by Norbert Wiener (1950). More broadly, this dualism reiterates ancient Gnostic and Greek dualisms that in turn root the Western Orthodox teaching of Original Sin—whose Augustinian language is in fact explicitly invoked in one of the key documents of early conceptions of cyberspace, namely, William Gibson’s *Neuromancer*—the science-fiction novel that propelled the term ‘cyberspace’ into popular culture and academic discourse (Ess 2012b, pp. 5–7). Correlative notions of a disembodied “liberation in cyberspace” appealed both to “cyber-libertarians” such as John Perry Barlow (1996) as well as to some feminists and others rightly interested in overcoming the objectification and correlative subordination and violation of women (and others). Other feminists, however, early on raised warnings against the “old Cartesian trick” of seeking to forget the body (Stone 1991). Finally, by the end of the 1990s, this dualism was increasingly refuted along a range of research and reflection, including the work of Katherine Hayles, as well as that of Pierre Lévy (1998).

At the same time, the Cartesian-inspired epistemological models underlying much of the work in Artificial Intelligence in the latter half of the twentieth century—crudely, lumped under the name of cognitivism—were likewise receding in the face of emerging evidence in the neurosciences that highlighted the inextricable interactions between the various mechanisms and processes of “the body” and those traditionally affiliated with consciousness and awareness. These newer, radically non-dualistic views are captured under notions of “embedded mind,” “embedded cognition,” and “enactivism” (e.g., Horst 2011).

2.2 Phenomenology

From a historical perspective, however, these non-dualistic views are prefigured and developed within the frameworks of twentieth and twenty-first century phenomenology. Phenomenology can be briefly summarized as “the study of structures of consciousness as experienced from the first-person point of view” (Smith 2011). For example, by 1970, Maurice Natanson, drawing on the earlier work of Edmund Husserl, Jean-Paul Sartre, and Alfred Schutz, articulates a phenomenological account of the self as inextricably engaged with the world moment-to-moment. First of all, phenomenologists claim, we never *experience* “consciousness” as such, as abstract—but always as a concrete and specific consciousness *of* (X). Natanson writes: “To be conscious is to be conscious *of* something, a something which then stands to the activity of consciousness as the meaning of its performance” (1970, p. 3). Such consciousness, moreover, is that of a *unitary* self: “In the midst of action, the choices we make and the results of our choosing are to be understood in unitary fashion, as involving a being for whom the perception, evaluation, and definition of the situation are aspects of an integral self, a being at the center and source of a

world” (1970, p. 3). In this way, experiential consciousness is always *relational*—whether vis-à-vis its own self as made into an “object” of reflection and/or any further contents of consciousness, including other human beings and the world at large. For Natanson, this relationality is captured precisely in the erotic as the exemplar of fully engaged—and fully embodied—interrelationship:

[the self is] a being whose presence in the world is a unitary reality in which self and object are taken as integrally grounded in consciousness, understood as a directional force sustaining the entire range of perceptual life. Individual and action, self and situation, person and world are then bound to each other not only in their implications for each other but in their fundamental structure. Man [sic] is “in” the world as the lover is in relationship to the one he loves, not as the bearings are “in” the motor. (1970, p. 4)

In contrast, then, with an abstract, more or less universal self and body as located in an objective but external (Cartesian) grid of time and space—phenomenologically, we constantly experience ourselves as a unique “I,” one who experiences the world around us from our unique, first-person standpoint. Natanson contrasts “objective” notions of time and space with our experiences of always being in a particular Here and Now—one defined by our distinctive standpoints as rooted in our individual bodies. In particular, Natanson uses the term “corporeality” to refer to our first-person experiences of ourselves as a distinctive embodied self:

I am neither “in” my body nor “attached to” it; it does not belong to me or go along with me. *I am my body*. There is no distance between my hand and its grasping. [...] Instead of the common-sense way of thinking of the body in space at some time, I am a corporeality Here and Now whose being in the world is disclosed to me as *mine*. (1970, p. 11)

Natanson points out that these efforts at description are difficult to undertake, difficult to articulate, and difficult to take up in part because of three centuries of Cartesian philosophy that, contrary to phenomenological approaches, insists that “man can be understood in qualitatively the same terms as all other objects and events in the natural order. (1970, p. 4). This is to say: phenomenology resolutely resists the subordination of human beings, our experiences, and our self-understandings to the early modernist polarities of “subjective” vs. “objective” knowledge. Rather, phenomenology shares with existentialism the insistence on the epistemological legitimacy of first-person experience, *contra* its denigration as “mere subjectivity” in early modernity.

This phenomenological refutation of Cartesian mind-body dualism is further elaborated in the work of Merleau-Ponty, which inspired, for example, the neologism developed by the German philosopher Barbara Becker, *Leibsubjekt*—“Body-subject” (2001). More recently, Susan Stuart has likewise built on the work of Merleau-Ponty (and others) in her conjunction of enactivism with phenomenology. Enactivism foregrounds how “... through a sensori-affective, felt dynamics, we build up non-conscious intentional expectations about how our world will continue to be” (2008, p. 256). Stuart sees this view of embodied cognition as directly meshing with phenomenological accounts of our experiencing the world as embodied knowers-and-agents. Specifically, the embodied agent portrayed in enactivism is “essentially

anti-dualistic” as this agent is “... dynamically-coupled to the world in which she is embedded; thus, agent, world and action are necessarily intricately interwoven, and the agent’s body, experience, action, and world shape the way in which she deals with her everyday pragmatic concerns” (2008, p. 256).

Stuart goes on to explore possible linkages between the contemporary findings of enactivism and Kantian epistemology. I and May Thorseth have drawn on Stuart’s work (among others) as highlighting these linkages between non-dualistic views of cognition and selfhood in the philosophical anthropology we have developed in our work on trust and virtual worlds, for example (Ess and Thorseth 2012, p. xviii ff.).

2.3 *Summary*

These phenomenological analyses emphasize radically non-dualistic and strongly relational notions of selfhood and embodiment in our knowing and navigating the world. They thereby prefigure and complement the similar turns we have seen in the late twentieth century, including the literatures of virtuality and virtual worlds (Lévy 1998), Internet studies more broadly, and emerging neuroscientific views of enactivism and the embodied mind.

2.4 *How These Developments Prefigure and Support Our Characterizations*

I hope it is now fairly straightforward to see how phenomenology directly supports our first characterization of life in the (analogue-) digital age, beginning with:

- a. By blurring the distinction between reality and virtuality;

Again, in the 1990s this distinction mapped hard distinctions between the offline and the online, between what Barlow, drawing on Gibson, characterized as “meat-space” vs. Cyberspace—distinctions, finally, that rested on squarely Cartesian (if not Augustinian, Stoic, and Gnostic) dualisms. The dissolution of these dualisms—in enactivism, feminism, and most especially phenomenology in the twentieth century—thus means the dissolution of a hard reality/virtuality distinction as well. In particular, Barbara Becker’s neologism *Leibsubjekt*—“body-subject”¹—neatly anticipates and reinforces our defining neologism of “onlife” as a primary way of capturing these dissolutions.

¹ Leibsubjekt conjoins Leib (body) and subjekt (subject), where the latter refers to the full spectrum of faculties and actions we ordinarily associate with “subjectivity,” including consciousness and self-consciousness, identity and self-identity, intentionality, affectivity, agency, and so on. Becker developed the term in conjunction with her larger critique of dualism and radical versions of social constructivism, in order to reassert the intransigent materiality of body, precisely as inextricably interwoven with our subjectivity. In this, she drew from phenomenology and from her own first-hand struggles with cancer. (Most sadly, the cancer ultimately took her life in 2009.)

These developments directly support two of the remaining characterizations, namely,

b. By blurring the distinctions between human, machine and nature;

And

c. By shifting from the primacy of entities over interactions to the primacy of interactions over entities

With regard to “b”: it would be helpful to recall and summarize here the extensive phenomenological analyses of how human beings experience the various tools we develop and use—most famously, beginning with Heidegger’s concept of “readiness-to-hand”. For us, the point is just that in our experiences of using our tools in engaged and familiar ways—in Heidegger’s example, a carpenter using a hammer—we do *not* experience them as alien objects radically separate from our subjectivity. Rather, “there are no subjects and no objects; there is only the experience of the ongoing task (e.g., hammering)” (Wheeler 2011).

So far as I can gather, this thread of phenomenological analysis further meshes with more contemporary views of “embedded and embodied cognition.” Steven Horst puts it this way:

Perception, action, and even imagination and reasoning are “embodied”, not only in the sense of being realized through some physical system, but in the stronger sense that they involve bodily processes that extend beyond the brain into the nervous system and even into other tissue and to biochemical processes in the body. At the same time, even the brain processes involved in cognition involve non-representational, non-computational skills of bodily know-how. The mind is also “embedded” in its environment, not only in the sense of interacting with it causally through perceptual “inputs” and behavioral “outputs”, but in the more radical sense that things outside the physical organism—from tools to prostheses to books and websites—are integrally part of cognition itself. We are, as Andy Clark puts it, already “natural-born cyborgs.” (Horst 2011)

The cyborg—“cybernetic organism”—figure here is important. At least some early imaginings of cyborgs expressed precisely the great *fear* that such beings ostensibly represented the breakdown and violation of a strong nature-machine dichotomy. At least by the time of Donna Haraway’s famous “Cyborg Manifesto” (1991), however, feminist thought rejected such fears as thereby resting on a (yet another) mistaken binary (cf. Lennon 2010).

Finally, these phenomenological and enactivist insights are likewise at work in the Medium Theory I draw on, beginning with Marshall McLuhan’s defining principle in *Understanding Media*. Most simply, we create our technologies, including our communication technologies, as tools that extend ourselves in various ways: but our use of those tools reshapes us in turn. So he says, for example, “Physiologically, man in the normal use of technology (or his variously extended body) is perpetually modified by it and in turn finds ever new ways of modifying his technology” (1964, p. 46). As Richard Cavell has documented, McLuhan developed this understanding of technology, including communication *qua* technology, precisely within a foundational embrace of the body and correlative rejection of Cartesian dualism (2003, pp. 83–85). *With regard to “c”*: here again, the focus on relationality—over against, say, a kind of Hobbesian focus on the individual conceived on the model

of a (crude) atomism—is thematic in phenomenology as well as other twentieth century currents of thought.

As but one example in phenomenology: in her analysis and descriptions of various forms of sexual experience, Sara Ruddick first of all critiques more dualistic understandings of sexuality—i.e. as something that occurs solely between “bodies” as somehow radically separated from their “owner’s” sense of selfhood and identity (1975). Rather, a phenomenological account of our most intense experiences (such as experiences of playing sports) foregrounds how in such experiences, there is no felt mind-body dualism, but rather an immediate unity of self and body. Not all sexual experiences count (or need to count) for Ruddick as involving such direct unity: but she argues that those that do are morally preferable first of all because in such experiences, our own personhood and autonomy cannot be separated from our bodies, and hence these experiences foster the Kantian duty of respect for the Other as a person. Ruddick further argues that such sexual experiences thereby foster two additional virtues—namely, the norm of equality and the virtue of loving (Ruddick 1975, p. 98 ff.; cf. Ess 2014). To recall Natanson, finally, our erotic engagement with an Other is at once the exemplar and a primary instantiation of our inextricable relationality with one another as co-constituting our identities as embodied beings (1970, p. 47 f.).

At the same time, at least to some degree, this focus on interactions more than isolated entities is already at work in Kant’s epistemology. Broadly, Kant makes clear that science, as resting on both mathematical and empirical foundations, thereby focuses on the law-like relationships (*Verhältnisse*) between entities. This becomes perhaps most prominent in his *Critique of Judgment*, with its focus on the *sensus communis* as an intersubjectively shared sense of aesthetic judgment (Thorseth 2012).

As yet another example: in his “theory of communicative action,” Habermas develops a phenomenological notion of a “life-world,” one “bounded by the totality of interpretations presupposed by the members as background knowledge” (1985, p. 13). Such a life-world, with its background of shared assumptions, is then the context for the communicative practices Habermas takes as paradigmatic of rationality. As characterized by his expositor, Thomas McCarthy, Habermas focuses on morality as intertwined with a socialized intuition that further brings into play the (equally Aristotelian) recognition that self-identity, as shaped by the society in which one finds oneself, “...is from the start interwoven with relations of mutual recognition” (1994, p. 47). This interdependence, moreover, “...brings with it a reciprocal vulnerability that calls for guarantees of mutual consideration to preserve both the integrity of individual persons and the web of interpersonal relations in which their identities are formed and maintained.” (*ibid*)

The phrase “the web of interpersonal relations,” finally, echoes and reinforces especially feminist emphases on ethical decision-making within “the web of relationships,” beginning with the work of Carol Gilligan (1982). At the same time, as we will explore more fully below, one of the most significant contemporary philosophical theories of *privacy*—namely, Helen Nissenbaum’s account of privacy as “contextual integrity” (2010)—rests precisely on such relational notions of

selfhood: Nissenbaum draws on the account of human beings developed by James Rachels—one that begins (again) with an account of selfhood as inextricably interwoven with the specific roles and relationships we engage in (1975).

None of this is accidental for our project. As I have documented earlier, Luciano Floridi's information ontology, as he himself emphasizes, “draws on the emphasis on the interconnection between all things familiar from recent environmental and feminist philosophies—and, importantly, from such non-Western views as Buddhism and Confucian thought” (Ess 2009, p. 161). This is to say: Floridi's information ontology, among its many other virtues, brings forward precisely the ways in which computational technologies and computer *networks* facilitate and enable our sense of selfhood as relational beings first of all. But as it does so, it thereby reiterates at least parallel understandings of selfhood *qua* relational found in both modern (Western) feminism, ecology, and phenomenology—if not in at least some version of Kant—as well as in both ancient Western and Eastern frameworks.

Insofar as this is true, then our focus in the (analogue-) digital age on interactions and relationality rightly highlights these as brought forward in striking new ways. But it may be more accurate to say that this is a *renewed* focus, one that has been brewing for quite some time in modern Western philosophy (if not in Kant, then certainly in phenomenology)—and one that would not seem unfamiliar to ancients in either Western or Eastern worlds.

3 Digital-Analogue Media and the (re)Emergence of Relational Selves

This section begins with a warning against our focusing overly much on “the digital” in our analyses, insofar as the analogue—most especially in the form of humans' embodied sensation and perception—does not disappear in the age of hyper-connected realities (3.1). Analogue embodiment further correlates with a stubborn insistence in contemporary philosophy and Internet Studies on singular identities (3.2). At the same time, there is strong evidence suggesting foundational shifts towards more relational and affective emphases of selfhood and identity in Western societies—along with correlative changes in our understandings and expectations of “privacy” (3.3). These shifts have enormous *political* consequences: most simply, where the individual-rational emphases of Western (high) modernity correlate with liberal-democratic institutions and core norms such as equality—historically, relational (and more affective) emphases have correlated with less egalitarian and more authoritarian forms of power and control (3.4).

3.1 *Digital Media and Digital Futures?*

A developing European “onlife” implicates at least two digitally-based technologies. The first (a) includes the multiple forms of (analogue-) digital media, where

‘media’ refers to both (i) familiar technologies such as digital cameras and similar recording/storing technologies, often as embedded in smartphones, for the production and distribution of diverse forms of media *qua* content, as this content is (ii) distributed through (analogue-) digital media *qua* channels (computers and computer networks, but also more “traditional” radio and TV broadcasts, film, print, etc.) and devices (including “mobile-locative” devices such as smartphones, tablets, and other portable devices that are both connected to the Internet/Web and are GPS-enabled). In these directions, the “mobility revolution” (better, in my view, ‘evolution’) is a primary locus of the sorts of developments that we may anticipate to be central to the further evolution of onlife.

I think it increasingly critical to notice, however, that these technologies remain *analogue* technologies, beginning with their inputs (voice, light, etc.) and outputs (sound, image, etc.). This is important for two reasons: (a) just as we rightly concern ourselves with the *affordances* of digital technologies *qua* digital—so we need to attend to the affordances of the analogue components of these technologies as well, or otherwise risk a potentially misleading myopia in our focus, and (b) highlighting the analogue side of these technologies thereby highlights the *embodied* character of their designers, consumers, and users—i.e., as human beings whose sensory and enkinaesthetic engagement with the world remains deeply analogue (cf. Massumi 2002). (As various schemes of human enhancement and re-engineering are realized, all of this may well change.)

(Analogue-) digital media are at work in other aspects of contemporary and future onlife, including (b) the development of “social robots” such as “telenoids.”² A telenoid is designed to convey *embodied* forms of communication, including “hugs”—while being remotely controlled through Internet and other forms of digital connections. Robots in various forms—including “care-bots,” “warrior-bots,” and, of course, “sex-bots”—will become increasingly commonplace appliances in an analogue-digital future, for better and for worse (Turkle 2011).

3.2 *Trust, Identity, and Polity*

A synthesis of philosophical approaches to trust has issued in a philosophical anthropology that highlights the role of embodiment in our knowing and navigating the world, including a phenomenologically-rooted emphasis on the Husserlian “I” or first-person perspective (indexicality) as anchoring our sense of experience in the world (Ess and Thorseth 2012). There emerges here a stubborn insistence on singular identity as rooted in the body, as well as in a Kantian epistemology that foregrounds the role of a transcendental unity of apperception in the construction of a coherent experience out of the otherwise fragmented and incoherent data stream—a unity expressed in the phrase and epistemological requirement of the “I think.” More recent work in philosophy on “personal identity online” has reinforced these

² E.g., <<http://spectrum.ieee.org/automaton/robotics/humanoids/telenoid-r1-hiroshi-ishiguro-newest-and-strangest-android>>. Telenoids have been used in a pilot project on eldercare in Denmark, for example, with promising initial results.

conceptions of identity, specifically with regard to online communicative engagements (Ess 2012a). A broad range of empirical findings from Internet Studies over the past decade or so likewise highlights the primacy of a singular identity—one that spans precisely the increasingly blurred distinction between online and offline, as our phrase “Onlife” suggests (Ess and Consalvo 2011; Ess and Dutton 2013).

3.3 *Changing Selves, Changing Privacies*

On the other hand, the particular emphases defining such selves and identities appear to be in flux. In “Western” societies, the affordances of what McLuhan and others call “electric media,” including contemporary ICTs, appear to foster a shift from the modern Western emphases on the self as primarily *rational*, *individual*, and thereby an ethically *autonomous* moral agent towards greater (and classically “Eastern” and pre-modern) emphases on the self as primarily *emotive*, and *relational*—i.e., as constituted exclusively in terms of one’s multiple relationships, beginning with the family and extending through the larger society and (super)natural orders. This can be seen in the first instance in the movement, especially among the young, from strongly individual notions of privacy towards “publicly private/privately public” sharing of information on social networking sites (Facebook et al.) as well as in illegal sharing of copyrighted materials. These moves are followed by correlative shifts in privacy and copyright laws, i.e., away from laws built around earlier media and strongly *individual* and *exclusive* senses of privacy and property.

So, for example, Helen Nissenbaum builds her account of privacy as “contextual integrity” on the clearly relational sense of selfhood articulated by James Rachels, as we have seen. This account is further coherent with the language and conceptualizations of “privacy” in Denmark and Norway, for example. To be sure, strongly individual rights to privacy are protected here—in part, as these countries hold closely to European Union regulations of individual data privacy protection. At the same time, however, “privacy” is discussed here more in terms of *privatlivet* (“private life”) and the *intimsfære* (“intimate sphere”). These are understood in *both* individual and relational terms. In particular, Norway’s research ethics guidelines make explicit the requirement that researchers not only to protect the privacy of *individual* subjects, but also that of their close relationships, i.e., those who constitute the individual’s intimate sphere and private life (NESH 2006; Ess and Fosshem 2013). Similar comments hold with regard to property notions. The political program of the Pirate Party, for example, criticizes current intellectual property rights regimes as too individual and too exclusive, and thereby, as no longer suitable to contemporary attitudes towards and practices of sharing digital files—most notably, entertainment materials such as music and movies (Ess 2013, p. 92).

Par contra, in especially North Asian societies, the shifts go in the opposite direction—namely from strongly *relational* emphases in selfhood and identity towards increasingly *individual* emphases (Yan 2010; Hansen and Svarverud 2010). These shifts are reflected not only in radical changes in social practices, such as

younger people demanding individual privacy (Japan, Thailand) as well as “privacy” shifting from an originally negative concept to a more Western concept of privacy as a positive good (China): they are further reflected in changing privacy laws, including the encoding of individual privacy rights in the Chinese constitution in recent years—so much so, in fact, as to include discussions of introducing due process rights (Sui 2011; Greenleaf 2011). (And this after a decade of the *loss* of due process rights in the U.S. and the E.U.: Cohen 2012.)

3.4 *Changing Selves, Changing Politics?*

Given the foundational importance of the rational-autonomous individual to not only classical conceptions of privacy, but also to modern Western conceptions of liberal democracies, these shifts are of enormous *political* moment as well. Specifically, as highlighted again in Medium Theory, classically *relational* selves correlate with hierarchical social structures and non-democratic regimes.

Given important caveats,³ a key question is how far these correlations will reappear—perhaps in the hybridized forms suggested by Walter Ong’s (1988) notion of the “secondary orality” of electric media (i.e., one that hybridizes primary orality with subsequent communication modalities of literacy and print—where these last two correlate with the rise of the modern rational individual and liberal-democratic governance)? On the one hand, “Eastern” movement (at least in North Asia, along with, perhaps, analogous movements in the Islamic world, as manifest most dramatically in the “Arab Springs” of 2011) appears to indeed be towards more democratic forms of governance, as correlates of more rational-individual-autonomous conceptions of self and stronger *individual* conceptions of privacy. On the other hand, “Western” movement towards more relational (and emotive) emphases of selfhood correlate with, e.g., the erosion of due process rights for privacy, as well as increasing economic and political hierarchies in Western societies.

These developments may point towards a *convergence* between “Western” and “Eastern” societies of basic assumptions regarding identity and selfhood. This convergence may appear, for example, in recently developed notions of *relational autonomy* (Mackenzie 2008) and what Luciano Floridi has circumscribed as *distributed morality* and *distributed responsibility* (2012). These notions further overlap with our Onlife colleague Judith Simon’s work on “Distributed epistemic responsibility,” included here. All of this taken together represents important new developments in our understanding of what moral agency and responsibility might look like for selfhood and identity that conjoins both rational-individual and relational-affective emphases—and where the relationality in play here includes the multiple relationships shared and embodied in the online networks that constitute much of our hyperconnected reality.

³ Our Onlife colleague Mireille Hildebrandt has generously shared a wealth of relevant references that offer careful refinement and important revision regarding how we best characterize power relations in non-state societies.

Ideally, such hybrid individual-relational selves will be able to sustain the democratic processes and norms—including equality—that correlate with modern emphases on rational-individual selves as cultivated through the communication technologies of literacy and print. But the rise of the relational self and shifts away from individual notions of privacy necessarily evokes a critical question: how far may equality and democratic processes survive in future societies as constituted by increasingly relational selves?

4 Relational Selves, Democracy and Equality?

I explore this question initially by way of a review of recent work in (Western) Internet Studies that highlights different expressions of “third spaces” of shared communication in online venues—i.e., ones that presume a sense of group rather than individual privacy. At the same time, these third spaces sustain individual privacy in significant ways, and thereby facilitate at least local or micro-level forms of political activism and democratizing citizenship (4.1). This work brings to the foreground, however, a core tension between modern Western commitments to the values of equality, including gender equality, and the values of more relational selves in late modern societies (4.2). Finally, (4.3) recent work on Confucian traditions helps both: *reiterate* this core tension between these traditions (as rooted in relational conceptions of selfhood) and Western commitments to robustly democratic regimes and a core modern value of *equality*, including gender equality (rooted in more individual conceptions of selfhood), and thereby, *point* towards what “democracy” might look like for more relational (and, perhaps, more emotive) selves—both in *praxis* in contemporary North Asia and thereby as a concrete example of what “democracy 2.0” might look like in Western contexts as well.

4.1 Recent Work in (Western) Internet Studies

There is something of a thread of recognition in Internet Studies that online communication venues foster what might be called “third spaces,” i.e., ones shaped by a sense of group sharing and intimacy that is neither individually private in a strong sense nor public in some wholesale sense. So, for example, Elizabeth Bassett and Kate O’Riordan described the interactions on a listserv devoted to GLBT participation and discussion in terms of a “partial privacy,”

... because the participants constructed utterances that they stated they would not convey to certain audiences such as their family. This facilitated the participant’s illusion that Gay-girls.com was a space over which they exercised some control, and in which they could expect quite high levels of confidentiality, safety and freedom. (2002, p. 241)

This sense (however illusory) of a partially private communicative space characterizes manifold communicative phenomena in the age of Web 2.0 as well, for example,

in Patricia Lange’s account of how young people using Facebook are able to carve out “publicly private” and “privately public” communication strategies (2007). At the same time, such spaces closely cohere with Helen Nissenbaum’s account of privacy as “contextual” (2010). Most briefly, Nissenbaum defines privacy in terms of a right to an “appropriate” flow of information, where this appropriateness in turn depends upon a specific context, such as the marketplace, education, political life, and so on. What is critical here is that this appropriateness is defined primarily by the expectations of the human agents whose specific roles and relationships constitute a given context. Following Nissenbaum’s example: when two persons—one as patient, the second as physician—thereby constitute a medical informational context, the patient expects certain norms of privacy regarding her medical details to be respected. On the one hand, these details are appropriately shared with other medical professionals immediately concerned with her case. On the other hand, the physician might instead operate by the informational norms of the marketplace, so as to put her details up for sale, e.g., to a drug or advertising company. While this more public use of her medical information might be perfectly appropriate within a marketplace context—within the medical context, the patient would rightly feel that her privacy expectations had been inappropriately violated (2010, p. 33).

Following Nissenbaum’s account, it is hence perfectly appropriate for human agents, as engaging with one another across a range of possible relationships and roles, to establish and negotiate within specific contexts notions of “privacy” that are “partially public,” i.e., as shared third spaces between a strictly individual conception of privacy and a fully public, non-private space. As we have seen, such conceptions are already in play and articulated in Denmark and Norway in the terms *privatlivet* and *intimsfære*, and in the Norwegian research ethics guidelines. Even more concretely, Stine Lomborg has analyzed a prominent Danish blog (*Huskebloggen*, “The Memory Blog”) as constituting an online example of the *intimsfære*—a shared communicative space that is between strict individual privacy and wholesale publicity. Lomborg’s analysis highlights fine-grained details of “phatic communication” between the primary blogger and her audience, communication that signals, “listenership, reciprocity, availability for conversation, concern and empathy, and this, in turn, frames the blog as a personal space” (2012, p. 428). Specifically,

To maintain the blog as a personal space, self-disclosure plays an important role through the personal, even intimate, experiences and emotions revealed in the blog conversation. By this means, both author and readers balance a fine line between, on the one hand, pressure to reveal personal issues as a preamble for developing relationships among participants and, on the other hand, a norm of non-intrusiveness to protect each other’s [individual] privacy. (2012, p. 432)

The upshot, finally, is a sense of shared personal or intimate space that correlates with Georg Simmel’s account of “the sociable self”—a self engaged in a network of relationships, where sociability means “highlighting similarities and de-emphasizing individuality in conversation by ‘hiding’ intimate and potentially uncomfortable topics because serious discussion disturbs and threatens the continuity of conversation.” (*ibid*).

This capacity to retain some element of individual privacy while participating in a shared intimate or personal space with others correlates with what we have seen above as the construction of a “public privacy” in online venues, as a third space between purely individual privacy and indiscriminant publicity. Moreover—and as we would expect in light of the historical and philosophical correlations between individual privacy and agency, on the one hand, and democratic processes on the other—this third space opens up distinctive political possibilities, as described by Maria Bakardjieva in terms of “subactivism” and “mundane citizenship” (2009). Bakardjieva acknowledges what we might think of as “the grand narratives” of conceptualizing the potentials of the Internet and the Web for helping to realize and expand democratic processes: these include communitarian and Habermasian frameworks that, from my perspective, tended to dominate discourse and research in the 1990s and in the early part of the twenty-first century. These grand versions of democracy, moreover, are often pitted against equally grand dystopian visions—perhaps most dramatically, the Orwellian “Big Brother” scenarios that “total transparency” online all but inevitably seems to entail (Jensen 2007). But Bakardjieva, prominent for her various explorations of “the Internet and everyday life” (2005), points to a more recent, somewhat more modest thread that runs squarely between these grand polarities:

A common feature of these works is the insistence that we should look for germs and projections of the political and public world in the private quarters and daily dealings of individual persons. Everyday thoughts, conversations, and activities have a bearing on democratic politics (see Couldry et al. 2007). Some of the necessary conditions for a functioning democracy exist at the level of lived experience, resources, and subjective dispositions (Dahlgren 2003). Put together, these arguments mark a “cultural turn” (Dahlgren 2003) in the study of democracy and political communication. (Bakardjieva 2009, p. 92)

Drawing on classical feminist sources as well as the work of Lefebvre (1971), Beck on “subpolitics” (1997), and Giddens’ notion of “life politics” (1991) as foci more appropriate to a second stage or late modernity, Bakardjieva describes subactivism first in terms of its locus in

...the private sphere or the small social world. It blends ethics and politics, or oscillates around that fuzzy boundary where one merges into the other. It is rooted in the subject but necessarily involves collective identities often in an imagined form—recall Anderson’s (1983) imagined communities. It is constituted by numerous acts of positioning—often in the imaginary vis-à-vis large-scale political, moral, and cultural confrontations, but also with respect to ongoing micro interactions and conversations. *It is not about political power in the strict sense, but about personal empowerment seen as the power of the subject to be the person that they want to be in accordance with his or her reflexively chosen moral and political standards.* (Bakardjieva 2009, p. 96; emphasis added, CE)

While grounded, we may say, in an everyday lifeworld not immediately focused on democracy in the larger, more prominent ways (e.g., the Arab Springs)—this subactivism nonetheless contains the potential for not insignificant political activity and impact:

Subactivism may or may not leak out of the small social world and become publicly visible, meaning that its acts and products, although multiple, can remain insulated in the private

sphere. This, however, does not condemn subactivism to inconsequentiality. The potential for it to be mobilized by trigger events and transformed into overt public activism is always in place. It is that essential bedrock against which individual citizens' capacity for participation in subpolitics or in the formal political institutions of the public world is shaped and nurtured. (*ibid*)

In short, this conception of subactivism foregrounds the political possibilities that attach to a more “mundane citizenship,” one primarily focusing on micro-level efforts as empowerment rooted in individual and small group interests. While not democracy on a grand (Habermasian or communitarian) scale—neither is this the complete loss of individual autonomy and democracy as threatened in more Orwellian visions. At the same time, the online communicative spaces that facilitate and foster such “subactivism” thereby share the same structures and characteristics of the third or “personal space” described by Lomborg, i.e., one that balances between a (still protected) individual privacy and an indiscriminate publicity. Such third spaces, again, are best described in terms of “partial privacy” (Bassett and O’Riordan 2002) and “contextual privacy” (Nissenbaum 2010). In particular, such spaces, as they allow individual participants to negotiate what they share for the sake of sociability and subactivism at the micro-level, thereby preserve a classic modern Western sense of individual privacy as protecting individual agency and autonomy—precisely for the sake of the project of being/becoming “the person we want to be” (Bakardjieva 2009, p. 96).

In broadest terms, this would mean that the relational or sociable selves of late modernity, while fully entangled in the communicative networks facilitated by Web 2.0 technologies, may indeed emerge as hybrid selves, ones that preserve at least some of the classic modern emphases on individual autonomy and agency—including the democratic correlates thereof, at least in local or small scales.

4.2 Core Tension: Equality and Gender Equality

At the same time, however, there is a key point of tension in the appeal to Giddens’ account of “life politics”—in contrast with the “emancipatory politics” of classic Western modernity. As Pak Wong has characterized these:

... where the former seeks individual liberation from (pre-)existing constraints, and aims to “reduce or eliminate exploitation, inequality and oppression” by “the imperatives of *justice, equality and participation*” (Giddens 1991, p. 211 f.), the latter is “a politics of lifestyle” that concerns with the question of ‘how shall we live?’ (Wong 2012, p. 86)

Wong further ties emancipatory politics to Charles Taylor’s account of the disengaged rational autonomous self as the sense of self emerging from the Enlightenment and fostering Western conceptions of democracy and the liberal state (Taylor 1989). Such a self is further marked by specific value commitments:

Values such as *knowledge, autonomy and equality* are being strived for to free people from any pre-given natural and social orders. These values are important because they are about people’s life chances. Once people are liberated from these constraints, they are propelled

to consider the questions concerning their self-actualization. As such, life politics represents an increasing emphasis on values such as *authenticity, individuality and diversity*. (Wong 2012, p. 86 f.)

The critical point here is: how far does the transition to late modernity—and, in our terms, the shift towards a more relational (and perhaps emotive) self as facilitated by “electric media” most broadly and digital media in particular—involve:

Either—an abandonment of the core values of emancipatory politics—including autonomy, equality, and gender equality—in a “life politics” that stresses different values,
And/Or—“life politics” as presuming, building upon, and thereby always necessarily incorporating the core values—and conception of self—of emancipatory politics?

The force of this question can be illuminated by exploring it within contemporary Confucian philosophy and real-world political contexts—i.e., the People’s Republic of China (PRC) and its governing Chinese Communist Party (CCP).

4.3 *Recent Work on Confucian Traditions and Contemporary Communication Technologies*

Most briefly, Wong’s thesis presents an exceptionally fine-grained analysis of the shifts in conception of selfhood that are central here—in both Western and Eastern, specifically Confucian traditions. On the one hand, as we have just seen, Wong finds an open tension between the sense of self and core values of the emancipatory politics of classical Western modernity and those of the “life politics” characteristic of what is variously characterized as “late,” “second stage,” or “radicalized modernity”.

In particular, after carefully reviewing a number of prominent critics and proponents of Web 2.0 technologies, Wong argues that the dividing line between critics and proponents in large measure rests precisely on their preferred conceptions of selfhood. Simply, the critics (including Nicolas Carr (2010), Sherry Turkle (2011), and Jaron Lanier (2010)) see contemporary media technologies as threatening either the modern disengaged (rational-autonomous) and/or expressive (Romantic) self as accounted for in Taylor’s work. By contrast, the proponents (e.g., Clay Shirky 2009, 2010) see these technologies as fostering precisely the more relational (and perhaps emotive) sense of self at work in “life politics” (Wong 2012, pp. 102–114). For Wong this remains an open debate—one that leaves us with some room (still) for *choice* in terms of what digital literacies, perhaps in conjunction with more classical literacies as rooted in *literacy-print*, we will take up, precisely in light of which sorts of social structures and political regimes we prefer, i.e., more egalitarian vs. More hierarchical, and more democratic vs. more non-democratic (2012, p. 123 f.).

Such a choice is clearly consistent with what we can call the third spaces of subactivism as a shorthand for the accounts of online communication and mundane citizenship in the work of Lomborg and Bakardjieva. Specifically, a choice in favor of sustaining equality and democracy would thereby favor the literacies and media

usages that preserve individual autonomy and privacy of agents who at the same time participate in savvy ways in the construction of such third spaces.

When Wong turns to Confucian thought and the Chinese Internet (as explored both through CCP documents and official newspaper pronouncements), however, the tension between emancipatory politics and life politics becomes pronounced and irresolvable.

To begin with, Confucian thought is rooted in hierarchical and patriarchal family structures, stressing first of all the virtue of filial piety. This family model becomes the model for the larger society, issuing in a clearly hierarchical structure of a paternalistic (if not frankly authoritarian) regime responsible for the well-being of a clearly subordinate people whose primary virtues are keyed towards sustaining *harmony (te)* within the larger community (Wong 2012, pp. 141 ff.).

This means, in particular, that Confucian thought thereby foregrounds *familial* privacy vis-à-vis the larger society. This is in keeping with the sense—at least prior to the past few decades—in Japan, Thailand, and China, that *individual* privacy *must* be something negative. *At the same time, we can see in this conception of Confucian familial or group privacy, as rooted in a relational conception of the self, a counterpart or analogue to the sorts of “partially private” third spaces described above as characteristic of contemporary Western usages of digital media technologies.*

This analogy with contemporary Western contexts is further strengthened in terms of the sense of *selfhood* at work here. Wong describes a “bicultural” or *dual* sense of selfhood that has emerged in Confucian tradition since exposure to Western cultures—namely, that of a small self (akin to the Western notion of the individual pursuing individual interests and desires, etc.) vis-à-vis “the great self” as relational and thereby concerned first with the well-being of the country (Wong 2012, p. 167). But again, if there is conflict between the great self and the harmony of the larger community vs. the small self and its strictly individual interests, then the small self must capitulate. In the terms developed above, individual autonomy and privacy (of the small self), however it may be sustained in Western contexts in third spaces and subactivism, will be sacrificed for the greater good in a strongly Confucian context.

But this further means that within this Confucian context, fundamental *equality*—both individual equality and with it gender equality—is simply an untenable, if not frankly undesirable value. Wong points out that this point has been made in the work of Mary Bockover, who concludes that “Western values of free expression, equality and free trade as well as the idea of personal and political autonomy are incompatible with Confucian values” (2010, p. 170; cited in Wong 2012, p. 168). While Wong argues persuasively that some forms of free expression and free economic exchange might survive (or even thrive) within contemporary (and future) Confucian China—equality (between individuals and between genders) will always disappear in the general subordination of “the people” to the government, a subordination willingly practiced as a virtue of “the great self.”

Both Wong’s thesis and forthcoming publications offer very helpful accounts of emerging Confucian politics as compatible with the “third spaces” and “subactivism” we have explored. These accounts suggest that, insofar as Western

developments may emerge in ways importantly analogous with North Asian Confucian (and Buddhist) traditions, we can be cautiously optimistic that some form of democratic processes and at least some characteristic democratic values may survive and thrive as digital media technologies continue to interact with our senses of selfhood, “life politics,” etc.

However that may be, these and other considerations (e.g., the ways in which the “return of the body” in developing communication technologies brings in its train the return and reinforcement of gender stereotypes in our self-presentations online) suggest that the classical modern conception of the self as an individual autonomy, its democratic engagements, and specifically commitments to individual privacy and the values of equality and gender equality may well be imperiled in the transition from emancipatory politics to “life politics” of late modernity. That is, insofar as the latter—and its conception of the self as primarily relational (and, perhaps, more emotive than rational)—is no longer seen to be rooted in and dependent upon the former, but rather as fully replacing the former: then, as the contemporary Chinese Confucian examples make clear, equality and gender equality will be sacrificed—along with the individual or “small self”—for the sake of greater harmony in a forthrightly hierarchical society.

5 Concluding Remarks

This analysis of Confucian societies is intended first of all to indicate that hybrid selves may well retain some dimensions of individual selfhood alongside more relational ones—sufficient for sustaining some aspects of democratic processes and commitments, but not necessarily sufficient for sustaining high modern Western norms of equality, including gender equality.

None of this is meant to suggest that Confucian societies are to be judged as necessarily deficient for their lack (so far) of commitments to equality and gender equality norms. Given the analogy Confucian societies may offer for future democratic societies constituted by more relational selves—the point is rather to suggest that the shift towards more relational selfhood seems to put at risk high modern Western norms of equality and gender equality.

Insofar as this is true, Medium Theory would argue that we now stand at a unique place of *choice* in both “Eastern” and “Western” societies—namely, the choice of determining the relative weight or emphasis on the individual vis-à-vis relational aspects of selfhood and identity. Most simply: if we should choose to sustain strong democratic societies, including commitments to norms of equality and gender equality—such a choice would entail sustaining high levels of the skills and abilities affiliated with *literacy-print*.

That is, to recall Foucault (1988), writing in particular is a technology of a particular sort of self, namely, the sort of (more) individual-rational self of high modernity—the autonomous subject, agent, and thereby citizen requisite who both justifies and requires high modern Western liberal-democratic societies and their core norms

of equality and gender equality. Our choices for future media use seem clear. If we do not want to risk equality norms and democratic processes, then we must endorse continued, if not expanded, emphasis on the acquisition and cultivation of the skills affiliated with literacy-print. Such cultivation need not come at the cost of diminishing attention to digital (electric) media skills. But to allow the latter to eclipse the former runs the very great risk, in my view, of society-wide losses of our abilities to cultivate the sorts of selves requisite for democracies and strong equalities.

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Towards a Grey Ecology

Stefana Broadbent and Claire Lobet-Maris

1 Economy of Attention: From Abundance to Scarcity

We often refer to the digital society as a society of abundance inasmuch as informational resources are concerned, in contrast to previous ages in which information was scarce, difficult to access and to disseminate. However, from the human perspective, this evolution may have transformed what was abundant in the past—the capacity to attend to information—into a much more scarce and widely distributed asset. If we follow the prevailing cognitivist model of attention, which postulates a mental architecture that has extensive computational power but significant intrinsic limitations in the capacity to attend to information, the formidable multiplication of informational content is inevitably determining a competitive view of the allocation of this mental resource. Following the social and economic logic of all scarce resources, we are therefore witnessing the creation of a market for attention.

According to KESSOUS and alii (2010), the term ‘economy of attention’ was coined by M. H. Goldhaber (1997) as a more appropriate way to discuss the economic models of the information society than the traditional industrial and monetary approaches. But the concept was not new. In the early 70’s, Herbert Simon had already suggested that

... in an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it... (Simon 1971, pp. 40–41).

The main tenant of this economic model is that, in an ecosystem in which attention is scarce and information abundant, being able to attract user focus has a huge

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value. Value is therefore created not by the information itself, but by creating an environment capable of drawing the attention of the greatest number of people for the longest amount of time.

This strategy underlies the business model of the majority of successful internet businesses. The crucial differentiator is not the production and distribution of content but the filtering, contextualization and organization of information. It is the structuring of content and the ability to make information more visible, and so more likely to be attended to, which supports the development of environments that are capable of drawing attention. When this is accompanied by techniques to measure, quantify and monetize attention, new mechanisms of trading can be developed. Although this has been the business case of the media for the last century, interactive media allows a far greater level of granularity and precision in the measurement of audience focus. The quantity and complexity of data produced by interactive systems, accompanied by self-learning capabilities, also allows for a completely new scale of analysis—as it is obvious from the debates around big data. We have therefore a simultaneous movement towards an increasingly granular and individual identification of attentional patterns and the accumulation of massive aggregated sets of user behaviours. Together, they engender an exceptionally valuable commodity for whoever has access to it. There is therefore a definite and unquestionable business drive to create digital environments capable of attracting audiences and keeping them there as long as possible.

Alongside the new economies being built more or less explicitly on the monetization of attentional processes, there is a growing concern regarding the subjective perception of loss or distortion of attention. Some well known authors like N. Carr (2011), S. Turkle (2011), J. Laniar (2011), have articulated the emerging discomfort felt by many of those regularly immersed in digital activities that they are losing their capacity to focus. The feeling of losing agency when engrossed in digital endeavours, and a dwindling sense of control on attention, is reported by many users (Zeldes et al. 2007; Misra and Stokols 2012; Marulanda and Jackson 2012). Once again, most explanations of this phenomenon invoke the limits of human ability to cope with an overabundance of information and devices. This malaise is too widespread to be waved away as a dystopian argument of ageing intellectuals clinging to old-fashioned models of learning and working. In our opinion, there is a true battle being waged around attention, with increasing economic, political and social stakes, and it is worth analysing some of its conceptual foundations.

We believe that the first step is to go beyond a purely cognitive perspective, which in our view forgets the centuries of social techniques to control and manage attention, and corners the issue into an excessively individualistic framework. We strive to put this issue into not only a socio-historical but also a political framework. It is our belief that the issue cannot be reduced to one of abundance vs. scarcity, and that the reported subjective sense of loss of focus and control that many users of digital media experience may be due not to the simple fact of being exposed to too much information on too many screens, but to the transformation and deprivation of the social environments that support the attribution of meaning.

Looking back, we have always lived in excessively stimulating environments, both in social and in physical terms, and attentional processes have allowed us to operate successfully in such spaces. Our material and physical environments are as rich and as complex as our digital ones, probably even more so. We have been successful in the physical space because, among other reasons, artefacts and social norms have sustained the cognitive processes of attention by orienting and significantly reducing the attentional demand of our physical environments. Traditionally, we have built spaces that orient our attention toward a certain direction—pulpits, tribunes, platforms and stages indicate to whom we should listen to and attend; museums and galleries signify what is worth looking at. We have ordered, classified and organized artefacts to signal their rank. In the social sphere, we have elaborated culturally shared signs that guide attention, indicators of social status that provide clues about whom we should attend to with priority. In other words, alongside the physiological responses that guide our attention in an automatic way (e.g. when there are sudden menacing noises or rapid movements), we have socially and collectively generated environments that orient and support our focus. If we adopt a model of cognition that distributes (Hutchins 1995) the burden of processing among artefacts, people and organizations, attention can be seen as a process supported by socially constructed environments.

We would like to argue that the new economic models, which increasingly attempt to exert control on what is attended to, together with the opaqueness and fragmentation of digital environments, have a joint detrimental effect on users' sense of focus and agency. Because of their nature and their novelty, digital systems are stripped of the traditional signs of intelligibility and relevance, which generally help us navigate the material world. This means that, in many cases, we have lost our cognitive and social props, and therefore the competition for attention has become much more primitive and brutal, and much more reliant on very basic attentional techniques (such as limiting the alternatives). This brutality is reinforced by what Z. Bauman (2005, 2007) and R. Sennett (2005) describe as the difficult conditions of the modern social existence, which put a higher burden on the individual as a consequence of the weakening of our traditional institutions of socialization.

2 Disembodiment and *Data-ification* of Experiences

There are many ways in which digital environments seem to have stripped material environments of their “readability”, thus pushing onto the individual the effort to decide what should be attended: the excessive complexity of the computational systems that create hierarchies and classifications that are opaque in their constitution (as is obvious in big data); the increasing standardization and fragmentation of activities to comply with a coding logic; the expansion of the networks of actors and the detachment of their traces from any specific identity. These are all different facets of a similar phenomenon that we could call disembodiment or data-ification of experiences.

Algorithmic systems, acting as new epistemic membranes, seem to increase the opacity of many social phenomena. They are also changing the ways individuals are (automatically) identified, tracked, profiled or evaluated, often in real time, adding opacity (invisibility) to traditional systems of identification, evaluation and, thus, of “government”. Automated, algorithmic systems are increasingly reading and editing behaviours, screening emotions, and calculating and measuring bodies, in order to profile users and to select the most appropriate information to display or decisions to propose. However, contrary to more classical social mechanisms of socialization and control, these systems are invisible and unintelligible as far as their actors and their normative frames are concerned. What is certain is that these processes challenge the notion of ‘alterity’, since they function on a principle of similarity—drawing profiles on what is common between individuals and similar others. In so doing, they raise the question of the possibility of an ‘agora’ as a space of difference and multiple “others”.

Control of attention is overtly fought over in the arena of consumption. For companies to succeed, it is vital to master and anticipate the intentions of consumers. Understanding and predicting intentions displaces the technological objective from the current world, which needs to be organized and structured, to the future one, which needs to be discovered and possibly fabricated and controlled. The traces that consumers leave behind, and that are constantly combined with the traces of similar individuals, allow this reconfiguration of the future. They not only help to generate profiles of consumers but also, more significantly, orient consumers’ access to and perception of information and thus the range of decisions they can make.

These new techniques to attract and channel our attention aim at shaping our intentions in a sort of prospective or virtual loop. This has two consequences: the first is reflected on time and the second on social relations. The temporality of consumption is different from that of production. In most organizations, the digitization of operations and processes has been seen as a source of rigidity and even fossilization of practices, freezing all actors in a digital cage. In the marketing world there is a different logic: the objective is to create in real time and constantly renew the profiles of consumers. These information systems are designed not to support the slow pace of the production process but to reflect the fleeting time of consumers’ attention, which must be constantly renewed and stimulated.

The identities and social relations, which emerge from these profiles, are volatile and piecemeal; they create categories, which individualize and separate more than they link and generate solidarities. The epistemological impossibility of determining what lies behind the groupings of individuals prevents any form of collective belonging, because the social categories and classes are essentially statistical and fluctuating. Furthermore, none of these categories is stable; on the contrary, they are permanently fluctuating. It corresponds to what T. H. Eriksen (2001) beautifully called “l’hégémonie des fragments”, the “hegemony of fragments”.

Alongside their opaqueness, computational systems by definition reduce and standardize actions. Binary systems strive to increase similarities rather than differences, fragmenting experiences into common chunks and processes. This is true both “behind the scenes”, in the logic of coding, and in the user interface, as attempts

to thinly disguise the underlying entities with graphic interfaces cannot fully transform the common operations to be performed. The manipulation of symbolic elements on user interfaces that often carry the same logic across a great variety of tasks (manipulating a client record in a call centre is analogous to manipulating the configuration of temperature level in the control of an industrial process, which is not dissimilar to filling in a medical form) means that, from the cognitive perspective, users are operating at an extremely high level of abstraction and generality. This type of fragmentation of information, combined with the processes required by the computational models available, often decontextualizes single elements of information and contributes to users' sense of detachment. Finally, the fact that many activities are carried out as highly separated units and in social isolation also increases the sense of dis-embodiment.

To some extent, what we observe is the progressive dominance of a specific regime, which Boltanski and Thevenot (1991) would qualify as an industrial regime, based on predictions, risk management, evidence-based practices and 'procéduralisme'. The virtual and the real are questioned since what we observe in this evolution is part of what Kallinikos (2011) calls the long journey of human distancing from immediate, social, living context through its abstraction into formal systems and categories or the data-ification of life. Furthermore, most of these systems are increasingly considering the body and its biometric attributes as the only objective or authentic source of 'personal truth', based on the central hypothesis that "the body does not lie" (F. K. AAS 2006). The flip side of this assumption is a clear lack of confidence in people, their subjectivity and their agency.

Similarly, Merzeau (2009) observes that severing digital traces from their owners transforms them into entities available for administrative or commercial exploitation. Unbound from the person they belong to and identify, these traces are open to endless "remanufacturing as new strategies and requirements emerge." (p. 24). This same phenomenon of distancing and objectification is what H. Nissenbaum (2010) addresses when she talks about "the loss of contextual integrity" to describe the risks associated with ignoring identity when following Web traces.

In summary, we are seeing computational systems that develop techniques to bypass individual intentions in favour of bodily states and statistical averages, and a concurrent transformation of all experiences into fragmented elements of data. The combination of these two trends amplifies the difficulty of individuals to attribute meaningful categories to the information they are attending to and increases their dependence on external mediators to filter and structure the content they are exposed to.

3 Interaction and Agency

The fragmentation of activities that we describe above, and that Bolter says encourages users to "proceduralize their behaviour" (2012, p. 45), influences the tasks and actions of agents. More significantly, it blurs the limits between the agent's actions

and the system's actions, in such a way that it becomes impossible for agents to distinguish between their intentions and the system's. In their interplay with the digital environments, therefore, systems' requests for attention are more than a simple appeal for the users' consciousness; they constitute an urgent request for participating in the action. However, this has been the case since the introduction of partially automated systems. What is new, and may have an even more distinctive effect on the definition of self, is the fragmentation of information and activities among networks of people through the digital systems. The collaborative online activities that now characterise the majority of "knowledge work" and that are being described in terms of swarms, collective intelligence, critical mass, etc. are perhaps the strongest manifestation of the shifting boundaries of the self. When we put together a network of agents who are individually fragmented by their interaction with their tools, and who organise their mutual activities around those fragments, is there an expansion or dilution of agency? Is the constant reciprocal appeal to contribute with small bits of information, tasks, exchange, just a more recent form of labour subdivision, or does it fundamentally alter the self's relation to others? Are we observing a growing instrumentation of relations that transforms others into data or, on the contrary—as many visionaries of the Internet (Rheingold 2002; Shirky 2008; Weinberger 2008) have asserted—the emergence of new forms of collective intelligence? The MIT Centre for Collective Intelligence has the following research question, which summarises the issue very well: "How can people and computers be connected so that—collectively—they act more intelligently than any individual, group, or computer has ever done before?"

If this is the case, relinquishing attention to the collective flow is not a problem. Defending individual attention, as many popular commentators such as Nicholas Carr (2011) decry, is counterproductive, because attention must be renegotiated constantly for the collective intelligence to work. Phenomenologically, many people are already experiencing a sense of boundary redefinition between self and other when they are online (Gergen 2000). The experiences described by gamers, programmers and recently simply people who are heavily engaged in email exchanges, all suggest a sense of flow and participation that is described by some as a loss of agency, and by others as an exhilarating extension of means.

In order to understand how all of this is happening, we have to refer to our exceptional, species specific (as Tommasello 2008 has shown), capacity to join into other people's attention. The ability to envisage that other people have a state of mind different from one's own; the capacity to read other people's intentions; and, finally, the inclination to join into other people's attentional states, are skills that underlie human language, culture and co-construction. Joint attention is seen by developmental psychologists as a prerequisite for language acquisition, and is potentially what explains why humans are the only species that has developed language and advanced forms of collaboration. It is also potentially what is making the hyperconnection proper to the digital world such a double-edged sword. We are extraordinarily capable of collaborating with minimal information on very poor communication channels (think Twitter or SMS), because our powers of empathy are so developed and our capacity to infer and project meanings and intentions are

supported by pragmatic processes of relevance (Sperber and Wilson 1995), which, again, rely on the sharing of attentional spaces. It is precisely this capacity for joint attention that causes us to feel lost in the inordinate flow of requests, messages, instructions and information so well described by Gergen (2000).

Our capacity to join into others' attentional spaces, read intentions from minimal traces, attribute meaning and co-ordinate around presumed shared mental states, means that we are able to collaborate on the reduced fragments of data because we can fill in the gaps. Clearly, when the experience is impoverished or the intentions of the other are too opaque and it is difficult to assume that the system is actually functioning with a principle of relevance, the communicational process becomes extremely costly. This cost may be part of the subjective feeling of loss and fatigue. In this case, the issue of attentional strain is not one of overload or excess, but of impoverishment, unintelligibility and incompleteness.

4 Control and Self-Presentation

It is not our intention to oppose a dystopic view of the digital revolution to an idealized era of authenticity and enhanced personal agency, characterized by the richness of face-to-face interaction and individuals' autonomous management of focus and attention. The social nature of attention, and its role in culture, language and collaboration, means that the control of attention is a cornerstone of social relations. The computational model of information organization is simply the most recent step in a long history of institutional management of this resource.

In many institutions, the mastery of attention has long been one of the axes of social dynamics, used to extract value, dominate, create allegiance, stratify and empower. It is this relational nature of attention management that Broadbent (2011) has called "attention to", attempting to shift the discourse from a purely cognitive one to a social one, where attention is a process that creates value. Teaching children to control their attention has been a significant objective of the educational system for as long as public education has been in operation. In the workplace, the equation between productivity and attention is deeply engrained in managerial models. This hypothesis is confirmed by T. Davenport and J. Beck (2001) when they claim that the effective allocation of employees' attention is a key factor in business competitiveness. If we look at this issue in a somewhat Marxist, Foucauldian and partisan reading, it can be seen as a step in the long path of the history of capitalism, as the contemporary page of the disciplinary conditions of life. The first page concerned the body and the shaping of a working force; the second page focused on knowledge and the development of the scientific organization of work. And now we are on the third page, which has attention as its object. Channelling, monitoring and controlling attention is engrained in work processes, rules, artefacts and now digital tools¹.

¹ The political and economic challenges around attention management are made manifest by the way different organizations react and regulate access to personal communication channels, such

The design of effective user interfaces, under the auspices of ergonomic and usability principles, ensures the elimination of potentially alternative perspectives or views, and focuses actions and reading on the prescribed elements of information, leaving very little to autonomous activity.

The ways in which different organizations regulate access to personal communication channels, such as mobile phones or Facebook, usually reveals deeper institutional ideologies. In broad terms, we find that greater freedom of access tends to be bestowed on those members of an organization who are expected to be “entrepreneurs of the self”. In fact, providing or withholding unlimited access to potentially distracting sources dovetails perfectly with the larger movement of making each individual an “entrepreneur of the self”.

In the eighties and nineties, N. Aubert and V. de Gaulejac (2007) argued, that the “ethics of excellence” in people management created the moral foundation of a system striving to control the totality of a person. In convincing employees that, by working for the firm, they were working for themselves, a complete blurring was made of professional and personal ambitions, and companies emerged as institutions capable of mediating individual destinies, supporting self-development, objects of true love, and in the end the only instrument able to fulfill the need for immortality of the self.

This work ethic creates particular interactions between people, interactions marked by the constant necessity to become visible. This quest for visibility takes the form of a new social game in which everyone is striving to capture the attention of others. In a sort of Goffmanian ‘parade’, self-branding and “newsing” oneself are ways to occupy the mental space of others and to stay on top of the competition. For businesses, being always present on personal communication channels, on web-platforms, etc., is a way to colonize the minds of their managers and to reduce their capacity to imagine another world.

5 Intimacy as a Defence

The new patterns of interaction that are emerging in highly digitized environments include the blurring of the boundaries between self and system and between self and others, and seem to engender a new typology of pathologies of which the most

as mobile phones or Facebook, and uncover some significant social dynamics surrounding the control of this process. Rules and procedures are devised in organizations to exclude personal devices or personal digital activities while on the job (by blocking external websites, or internet access, or mobile phones). The digital surveillance of all online activities, through dedicated surveillance software, can give rise to sanctions or the elimination of potentially distracting digital spaces. On the opposite end, obtaining “digital trust” or “digital independence” is a sign of status, of trustworthiness, of social promotion and acceptance. Having access to the whole range of the web, to personal communication devices and services, or in general being granted the “freedom” of self-determining when and where to put one’s attention in the realisation of one’s activities, is the ultimate sign of social recognition and of higher social status.

common is what is being described as ‘burn out’. This is characterized by the paradoxical feelings of being permanently exhausted, overloaded, under pressure, and yet not being able to achieve what is expected and losing productivity. While not new as a set of symptoms, the expectations of permanent availability and self promotion associated with the professional model of the “entrepreneur of the self” has heightened the sense of disorientation. Controlling the attention of others, and dealing with the constant solicitation of others, is accompanied by a dramatic sense of loss of self-direction, intentionality and planning.

The French expression of *for intérieur* can help us understand the human issues at stake here. In Latin, ‘for’ means jurisdiction. The common understanding (not the ecclesiastic one) of the *for intérieur* is the jurisdiction that each person applies to her/himself; it corresponds to what in social sciences is called a sense of agency. Managers and employees in organizations that are heavily reliant on digital environments, such as banks, public administrations, large corporations, describe a sort of permanent blurring between their interior life and their life online. They describe the difficulty of making their *for intérieur* exist vividly in their daily lives. They talk of burning from the inside. This sense of disorientation is not unique to workplaces, and seems to be emerging in the home. The feeling of losing a sense of control when engaged with digital devices is described equally by gamers, online shoppers, video consumers or social media participants. Invariably, users talk of their devices as “time sucks”, as environments in which they lose their intentions and agency.

Another facet of the same problem is what R. Sennett (1977) describes as the current tyranny of intimacy—that is, the central position of intimate relations in the perception of self-realization. In contrast to traditional patterns of social interactions, organized through distinct roles where individuals were more easily categorized as workers, lovers, parents, citizens, we now observe a greater fluidity and confusion of boundaries. Nowadays, observes Sennett, the king is naked. Social distances, masks and shelters have disappeared. Individuals have no sanctuaries to retreat to and hide from the scrutiny of others, but feel always visible and transparent... raising obvious questions for the plurality of social identities. To some extent, this explains the increasing position of the home and of the inner circle of the family as a protective cocoon and the growing success of activities such as cooking and gardening, which restore the sense of duration, agency and privacy.

On the digital side, we also have evidence of a retreat into the private, intimate and controllable. There is ample evidence showing that all new digital communication channels, from texting to Skype, from Facebook to instant messaging, are being used to strengthen people’s closest and most intimate relations (Baym 2010; Broadbent 2011; Madianou and Miller 2012). Contrary to common public discourse, people have not hugely extended their social network nor do they spend much time communicating with unknown digital acquaintances. Close scrutiny of what people actually do, with all the channels they have at their disposal, shows an intensification of exchanges with a few close ties, often less than five, leading to the strengthening of these relationships. A recent survey of 3,000 teenagers in Belgium (Gallez and Lobet-Maris 2011) confirmed the results of similar studies in the US (Ito 2010), showing that most of the participants had an ‘between us’ connectivity

based on intense chatting and messaging with the small circle of the friends they have in ‘real life’. The blurring of their off- and online lives leads them to consider the virtual world as just another social space where they can entertain continuous contact with an intimate group of friends and relations. This constant and ubiquitous link between individuals and their loved ones is emotionally intense, and the feeling of always being within reach can provide a profound sense of safety and comfort. However, concentrating so intensely on a small set of relationships—especially when they also function as information filters, as is increasingly happening on social networking services—dramatically reduces the exposure to “others”.

Social media are playing a significant role in filtering information: news and content are chosen and filtered by friends. The much hailed principle of sharing interesting and relevant content with friends, a principle trumpeted as a way to actively participate in the making of news, is also, by a simple principle of homophily, reducing our exposure to diversity. The homogeneity of the social groups that compose the majority of people’s close personal connections, ensures that the information circulated within the network is highly consensual and supportive of the values of the group.

In conclusion, we observe this retreat into the intimate as an attempt to regain a sense of mastery of attention and agency. This attempt is marked by the pursuit of a “protective cocoon”, which corresponds to an extreme form of filtering of social and relational information. When digital environments become too opaque, and experiences too abstract and remote, the solution is to fall back onto what is extremely familiar.

6 Grey Ecology as an Ecology of Agency and Alterity

The term “grey ecology” was introduced by P. Virilio in 2010, as a way of reflecting on the effects that the by-products of the digital revolution have on the human mind. In his work on the dromosphere (the space of technological acceleration), Virilio argued that just as accidents are intrinsic to technological innovation, pollution is the side effect of progress and, to some extent, its ‘normal’ but unacceptable companion. While many of the risks of the digital era are well known—the encroachment on privacy, extreme state surveillance, viral attacks, network meltdowns, data theft, etc.—and there is an active engagement on the part of experts, institutions and the public to find technical and political solutions to limit their impact, there is far less concern about digital pollution. In fact, pollution in the computational era evokes images of e-waste, old desktop computers strewn in open-air dumps, overheated data farms and silicon mines. But ecology does not simply refer to overconsumption, toxicity and waste; it also refers to equilibrium and diversity. What we want to suggest here is that one of the social prices being paid for the exponential increase of information is a reduction in the diversity of perspectives. The pervasive and obscure tracking of our digital life, and its real-time transformation into a myriad of fragmented and contextualized profiles, creates a sort of epistemic membrane,

which makes social identity and social belonging less understandable and more complex.

In a very similar vein, D. Quessada (2007) argues that the hegemony of dynamic differences makes the figure of the Other slowly disappear: “It seems that we now live in a proliferation of differences. It is not at all the same as the otherness (l’altérité). The all-round contemporary exaltation of difference is perhaps the clearest sign of the disappearance of otherness. When humans prevent themselves to be crossed by a founding division, [...] the setting necessary for the existence of the Other disappears and all figures vanish one after the other—whether in the form theological, political or ontological.” (p. 5) The brutality or the violence of this process could be related to the progressive disappearance of the social habitus (Bourdieu 1979), due to the extreme individualization and opacity of profiling and attention channeling mechanisms. The habitus was both a guarantee of a socially shared (class) episteme of the world and a collective protection against the world’s complexity and uncertainty. To say this in Goffmanian terms: we are losing the rituals and the codes that, when interacting with others who are different from us, help us to preserve our face while preserving the face of the other—a skill and process which is at the very root of social ties.

Without going as far as A. Touraine (1993), for whom the rationalization of life has progressively destroyed the traditional correspondence between social organization and personal life, leading to a massive de-socialization, we do believe that there is a tension around agency in the digital environments.

According to Virilio (1995), the transformation in the sense of agency leads to a dramatic loss of orientation, a significant disturbance in one’s relationship with oneself, the others and the world, which in turn has tremendous consequences for the sense of alterity and for democracy: “The specific negative aspect of information superhighways is precisely the loss of orientation regarding alterity (the other), a disturbance in the relationship with the other and with the world. It is obvious that this loss of orientation, this non-situation, is going to usher a deep crisis which will affect society and hence, democracy” (p. 1).

In the previous industrial age of “solid modernity” (Bauman 2001), exploitation, poverty and class conflicts both triggered and sustained the establishment of collective movements, making possible an industrial democracy. In the age of digital postmodernity, any collective movement (*ex pluribus unum*) is difficult to operate due to the opacity of the ‘digital assemblage’ and to the extreme individualization of our digital lives. And this, as already pointed out, leads to the loss of a clear figure of otherness. For A. Gorz (1993), “Classical class analysis cannot provide an answer to the question of which social forces would be capable of achieving these transformations. There is no central front where decisive battles can be won through class confrontation. In other words, the front is everywhere, because the power of capital is exercised in a diffuse fashion in every area of life” (p. 62) We suggest that Virilio’s concept of grey ecology can help us to reflect on how to protect our attention, and how to restore our sense of self, agency and social orientation. Grey ecology can be considered as an invitation to politicize our concerns about our human and mental resources, just as green ecology is doing with the natural resources. A

Grey ecology could open the door to new forms of solidarity by establishing a new front of collective engagement and general interest. To understand what this front would be defending, we could draw a parallel with what happened to the ‘artisans’ at the end of the nineteenth century. Over a hundred years ago the skills and gestures of craftsmen and women were incorporated into a scientific organizational regime and then automated. More recently it is our personal data, history and digital traces that are being captured. So now, as in the past, we are witnessing the process of expropriation of human prerogatives. The defence of attention can thus be situated in a long tradition of humanistic movements and conceptualized as a political and collective concern, and a new front for solidarity and resistance.

Two main observations legitimate this reference to ‘ecology’. First, as A. Gorz states (1993), ecology represents the tension between the “life-world” and the “quantification and monetary valuation of life”. It opposes the substitution of individuals’ autonomy and capacity for self-determination by mercantile, dependent, client relations. And second, ecology as a social and cultural movement is possibly the most relevant means of ‘resistance’ to digital fragmentation and its opaqueness. As S. Rodota (1999) asserts, ecology is a promising cultural and political path because it concerns people’s attitudes and lifestyles, and so allows a shared reflexivity on digital technologies and the pollution they engender, thus avoiding sterile pro and con debates. Ecology is also a means of spreading forms of cultural vigilance which can be promoted in schools and the media. And finally, it can direct political and industrial authorities towards actions and research which promote “clean technologies”—that is, technologies which are sustainable in respect to our attention and our capacity of self-determination and accountable regarding the processes they perform to fabricate identities and differences. To some extent, a step in this direction has already been taken by the European Regulator when it decided to introduce the concept of ‘Data Minimization’ into the project of personal data regulation in order to protect European citizens from the uncontrolled processing of their personal data.

Hannah Arendt warned us long ago that “miracles and catastrophies are two sides of the same coin”. In line with her concept of natality, could the grey ecology be the possibility of a new beginning?

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Reengineering and Reinventing both Democracy and the Concept of Life in the Digital Era

Yiannis Laouris

1 The Need to Reinvent Democracy in the Digital Era

1.1 *Direct Democracy; A Recipe for Chaos*

Democracy of the twenty-first century refers almost exclusively to the right to take part in the political process (i.e., the right to vote). Nevertheless, the percentages of citizens who choose to exert this basic human right have fallen in Europe to an average of less than 80% (Poland and Switzerland close to 50%) and in the US to around 60% (European Commission 2013). At the same time, the European political-economic system fails to secure employment for 26 million people (ca. 12%), (European Commission 2013). It is, to say the least, disgraceful that some politicians blame the youth for their reduced interest in politics and diminishing participation in societal matters, when the politicians are the ones who have failed to put in place accountable, transparent and efficient mechanisms and processes to secure one of the most basic human rights: the right to work. Next to corruption, the unprecedented crises of institutions and values and the lack of accountability, one of the root causes underlying the failure of current systems of governance to respond to challenges is the fact that those we elect as our representatives fail to lobby and promote for the issues for which they have been chosen. In a series of co-laboratories using the Structured Democratic Dialogue Process (SDDP) (Future Worlds Center 2012) with 20–25 participants in each working collaboratively for 3–7 days, it was repetitively observed that root inhibitors of the current systems of governance include primarily: The fact that political systems did not evolve like everything else around us; Lack of accountability of those in power; Corruption

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and conflicts of interest; Corporate control of the means of democracy. Follow-up co-laboratories exploring design options for ideal futures, revealed as most powerful factors mechanisms such as: Laws voted directly by people; Inclusiveness, dialogue, co-decision in local communities and their representation in decision-making; Continuous passive and active participation in the political process via online platforms; Independent interactive media created by citizens for citizens, and even suggestions for the end of political parties as institutions. It should not come as a surprise that citizens focus on ideas that seek to put in place better controls on those managing power and direct connections between people and law-making and/or decision-making processes. It is a broadly accepted thesis that the digital era has rendered most types of intermediaries obsolete or it has replaced them with technology; why not use technology to also bypass our representatives or even bring an end to political parties as institutions (Petridou et al. 2012)¹?

Since the digital era opens tremendous possibilities for real-time feedback, frequent polling and online voting for virtually any matter from anywhere on the planet, in the minds of many, more voting equals more democracy. Direct democracy, a term coined recently, refers to a specific (one of many) model of democratic participation in which all citizens have equal access, equal voice, and equal voting power on all issues. We argue that if we were to adopt such an approach when taking political or other important group decisions, we would most probably create chaos. The *direct democracy* paradigm should therefore be rigorously distinguished and differentiated from a paradigm that demands massive, but at the same time *authentic* democratic participation. The term “authentic” refers to the demand that all *relevant* stakeholders are given both opportunity to participate in a genuine manner, and voice to argue in a structured and documented way over issues that could potentially influence their lives. As simple as this might sound, we currently do not have the theoretical grounds or the technical means to implement such a model. The challenges spread in multiple dimensions. For example, how do we identify and engage those whose lives will be influenced by whatever is being discussed or it will be decided for every particular situation? How do we weight their voice without violating principles of democracy? In other words, how do we design and implement systems, which guarantee that voting outcomes will always both rely on wisdom and will at the same time, be fair to everyone involved? Furthermore, how do we protect the authenticity of citizens’ opinions and their anonymity? More importantly, how do we achieve true and not elusive equality (vide infra)?

Crozier, Huntington and Watanuki in their 1975 “The Crisis of Democracy” book (Crozier et al. 1975) report that Willy Brandt believed that “Western Europe has only 20 or 30 more years of democracy left in it; after that it will slide, engineless and rudderless, under the surrounding sea of dictatorship, and whether the dictation comes from a politburo or a junta will not make that much difference.” According to the same authors, a senior British official stated that “If Britain continues to be

¹ This factor ended up as one of the most influential ideas in the “Re-inventing Democracy in the Digital Era” SDDP, co-organized with the Digital Futures Task Force of the European Commission with participants from the European Youth Forum.

unable to resolve the seemingly un-resolvable problems of inflation-cum-prospective depression, observed, parliamentary democracy would ultimately be replaced by a dictatorship. And Takeo Miki warned in his first days in office that “Japanese democracy will collapse unless major reforms can be carried out and the people’s confidence in politics be restored.”

Many contemporary authors, using indicators of citizenship and democratic deficits, also suggest that the current system of governance is not democratic at all and that wide-reaching and pervasive problems threaten the legitimacy and stability of the political system (Dalton 2006; Durant 1995; Macedo et al. 2005; Rimmerman 2001). Several centuries after Rousseau, present-day authors consent that democracy does not exist anywhere in the world, even today (Rousseau 1923) it has indeed never existed (Magas 2013); except once in Athens just after Ephialtes² invented it, and it lasted for only about 140 years. Ephialtes (Wikipedia 2013) was literally the nightmare of the monarchists of those times, and his name in Greek translates to ‘nightmare’. We dare suggest that this is truer today than ever before. We put forward the thesis that this is why the systems of governance should and they are about to change!

True democracy is the nightmare of our contemporary politicians.

The above questions constitute grand challenges of our times that need to be addressed with high priority before the current systems of governance collapse completely. Some of the most relevant challenges, central to the EC’s 2020 horizon strategies, to UNESCO, to UN and to practically every future-looking organization on the planet, are discussed in the next section.

1.2 *Grand Challenges Towards Reengineering or Even Reinventing Democracy*

1.2.1 **Challenge #1: Identify and Engage the Right Stakeholders**

The first challenge demands that everybody who is a stakeholder in a situation must have the right to participate in any dialogue, deliberation, or decision on matters that are of concern to him or her. Indeed, the science of structured dialogic design predicts “*the capacity of a community of stakeholders to implement a plan of action effectively depends strongly on the true engagement of all whose lives might be affected*” (Flanagan and Christakis 2009; Laouris et al. 2008). Disregarding their participation is not only unethical, but also any plans made are bound to fail (Laouris et al. 2008). We therefore need to develop systems that guarantee the authentic

² Even though Ephialtes was assassinated in 461 BC and therefore did not live to participate in the Golden Age of Athens (480 BC—404 BC), he is credited as one of the founders of true democracy.

involvement of those whose lives might be influenced by any decisions taken. In the era of globalization and hyper-connectivity, these are not trivial problems. Should Europeans (or any others) have a say in what happens in Africa? Are the citizens of one European member state stakeholders in decisions regarding the management of the economy of another member state? Current political, economic and environmental deadlocks have challenged previously widely accepted notions of who the stakeholders in a particular situation are. Even if we admit that stakeholders might extend outside previously well-defined geographical boundaries, how do we design systems in which their voting power is somehow weighted in ways that are fair and just for everybody? Furthermore, what if decisions affect the “lives” of entities without a voice (living or non-living)? How do we secure their “participation” in a dialogue (May 2011; Wasilewski 2007) that “concerns” them?

1.2.2 Challenge #2: Voting Leads to Fair and Wise Results

Decision making based on majority voting has been the prevailing and unquestionable model of democracy for centuries. We know that the majority’s opinion is neither always just for everybody nor always right. Many societies, including the European Union, as well as the company law, have developed policies and mechanisms to protect the rights of minorities. However, now that today’s technology theoretically allows everybody to vote any time on any issue, we face a new threat: that of creating chaos. Interestingly, according to Özbekhan, Jantsch, and Christakis, who conceptualized the original prospectus of the Club of Rome titled “The Predicament of Mankind” (Christakis 2006), the premature selection of corrective actions to problems (i.e., premature voting) based on popular vote leads to an extrapolated future, which differs significantly from an ideal vision. This is because we fail to capture and to address the inter-relations, inter-connections and interactions between individual aspects (sub-problems) of the problematic situation, which we are trying to improve. Popular voting on complex issues often results in erroneous priorities (“EPE: The Erroneous Priorities Effect: (Dye and Conaway 1999)). However, with no better model at hand, questioning the validity of popular voting opens Pandora’s box. Nevertheless, the hyper-connectivity era encourages us to reconsider concepts like those of fairness and equality and to reengineer the concept of democracy.

Democracy has its roots in ancient Athens. Contrary to general belief, that model was not entirely based on popular voting. Athenians of the Golden Age were engaged collectively in searching and carefully examining meanings and alternatives together through a process they called “deliberation.” They aimed to fully understand the underlying problems, clarify the debatable situation and achieve consensus. They justified the correctness of their decision because they trusted their collective wisdom. The collectively agreed course of action was backed up by all and it was considered unthinkable or even unethical to go against it, not because it was a decision eventually ordered by their king, but a decision taken democratically and shared by the great majority of those considered

stakeholders. This model was workable because the number of citizens participating was relatively small.

More than two millennia later, we need to reinvent democracy in ways that millions can participate effectively. To achieve this we must guarantee that the individual has access to all relevant information, alternatives, and arguments necessary for him to her to vote responsibly. Courses of action should be chosen based on their capacity to facilitate change towards a collectively defined and agreed desired ideal future state. In sum, votes should not only be weighted in some way, to engage all relevant stakeholders fairly; moreover the process that precedes voting should capitalize on what we call *collective wisdom*.

Scientists now associated with the Institute of twenty-first century Agoras have been developing methodologies (“Interactive Management”; (Alexander 2003; Warfield and Cárdenas 1994)), Interpretive Structural Modeling algorithms (Warfield 1982) and software (Christakis 2000; Warfield 1994) for almost 30 years. The use of special software is critical in freeing participants from focusing on logistics, serving real-time documentation and more importantly taking decisions regarding the optimal choice of questions to deal with in order to minimize the time of engagement to produce meaningful results (Christakis and Dye 2008). The Digital Futures Task Force of the European Commission has also recently launched one of the most ambitious ever, online engines, inviting large-scale public consultation called FUTURIUM (Digital Futures Task Force 2012) (see policies below).

1.2.3 Challenge #3: Protecting Anonymity and Authenticity of Opinions

It is common experience that workshop or dialogue reporters are not only unable to record everything that is being said, but even worse, they more often than not distort the meaning and/or the intention of the proposer, therefore contributing to the feeling that one’s ideas are not appreciated (Laouris 2012). Technology allows high fidelity and high-resolution conservation of the exact words, sounds, videos, but also of the semantic meanings of what is said. Once digitalized, ideas can be processed in many ways. Innovations in the digitalization of ideas will probably lead to a new revolution in our struggle to exploit our collective intelligence. In a very similar way, even though voting is presumed to be confidential and a matter of individual choice, especially in small communities, political parties can estimate who voted what by re-constructing simple puzzles comprised of peoples’ networks, public statements and personal interests. In the era of digital hyper-connectivity and with digital privacy disappearing, there will be greater need to protect one’s thoughts, opinions, judgments and eventually choices and decisions.

1.2.4 Challenge #4: Achieve True and Not Elusive Equality

Three words, *liberté, égalité, fraternité* (French for liberty, equality, fraternity-brotherhood), captured the essence of the French Revolution. Those who sacrificed their lives dreaming for a better world have not done so in the name of an abstract

meaning of democracy, but for a concrete vision of real freedom, authentic equality and true brotherhood between all people. More than two centuries have passed and one would be barely justified to claim freedom, equality and brotherhood among twenty-first century citizens. The millennium hype that the emergence of information technologies would serve to close economic, educational, democratic, digital, and social gaps on our planet was not confirmed (Laouris and Laouri 2008). Alvin Toffler's (Toffler and Toffler 1995) transition to the Information Age, defined as the point when "progress depends more on the mind than on the muscle," happened long time ago, but people still work either a lot more than 8 h a day or they remain hopelessly unemployed. Likewise, Marx's dream for a stateless, classless society he called communism, where everyone can have what he or she needs, disappeared with the Berlin Wall.

Our digital futures challenge not only concepts such as human/technology relationships, presence, friendship, responsibility, agency, liability and capability, but also basic concepts of our existence such as freedom, equality, mortality (see next section) and even purpose. What does it mean to be free, or to be equal in the digital era? Achieving true freedom and equality are enormous challenges that unless addressed within the context of the 2020 horizon, our world will have no future. Designing technologies and implementing policies to safeguard the true individual human rights and freedoms constitute probably the greatest challenges for our future societies.

1.3 Policy Implications

1.3.1 Authentic Participation

As we have implied above, votes should probably not only be weighted to justly engage all relevant stakeholders; moreover, the process that precedes voting should be designed in structured ways and supported by innovative technologies to support participants capitalize on what we refer to as collective intelligence mal (Malone 2006) and collective wisdom (Christakis 1996; Flanagan and Christakis 2009). Research in these fields is rising rapidly. Scientists at the Center for Collective Intelligence at MIT (Malone 2006) founded by Thomas Malone in 2006 focus on the very basic research question: How can people and computers be connected so that—collectively—they act more intelligently than any individuals, groups, or computers have ever done before? The Wisdom Research at the University of Chicago (2007–2011) led by John Cacioppo (Cacioppo 2007) aspired to define wisdom, to explore the relationship between expertise and wisdom and to discover how experience could increase wisdom. The Institute for twenty-first century Agoras founded in 2003 by Aleco Christakis (Christakis 2003), is a leader in world-wide applications of their Structured Dialogic Design Process (SDDP) methodology (originally developed by John Warfield and Alexander N. Christakis in the early 1970s (Christakis 1996; Christakis 1973; Warfield and Cárdenas 1994). The SDDP enables a diverse group of stakeholders to engage in a democratic and structured dialogue, reach a

consensus and take actions, especially when participants represent diverse points of view, competing interests and different backgrounds. In Europe there is still very little research on these issues. The most visible initiatives come from the EC. The Onlife Initiative has probably created some momentum towards identifying the concepts that might require re-engineering in the digital era. The concept of freedom has been central in the Onlife Manifesto: “our selves are *both* free and social, i.e., that freedom does not occur in a vacuum, but in a space of affordances and constraints: together with freedom, our selves derive from and aspire to relationships and interactions with other selves, technological artifacts, and the rest of nature. As such, human beings are ‘free with elasticity’, to borrow an economic notion.” The challenge is how to manage and fine-tune this elasticity. The FUTURIUM, also an initiative of the Digital Task Force, invites citizens from across Europe to reflect on future European policies and propose and discuss ideal futures. The aim is to *design* rather than to anticipate or predict the future. Will this initiative become a new standard in Europe? Moreover, will FUTURIUM expand to include sophisticated algorithms to secure authentic participation? Stakeholder analysis, weighted voting, collective intelligence, collective wisdom, and management of complex societal systemic problems are just a few of the disciplines that need to be supported and developed further. Even when the theoretical challenges are resolved, we will need to develop techno-social systems like the ones’ under development by the Agoras Group that implement accompanying theory.

1.3.2 Respect Human Cognitive Limitations

Since the time that cognitive psychologist George Miller (Miller 1956) discovered that our short-term memory can only hold seven, plus or minus two, items and John Warfield (Warfield 1988) proposed that this number falls down to three items when we are expected to perform any operations on them (such as compare them), scientists have been aware of this eminent cognitive limitation. The overwhelming bombardment of today’s youth (and not only) with information through digital screens that demand their attention a significant part of a day (according to EUKIDS Online research the average time spent online by 9–16 year olds is 88 min per day in front of computers; (Livingstone et al. 2011) has brought to light another great limitation of our cognitive abilities: *our attentional abilities are also quite limited!* It should therefore come as no surprise that the prevalence of the attention deficit syndrome (i.e., ADHD) has increased significantly over the past two decades of the information revolution. Furthermore, with the number of options increasing and the impact of our choices becoming less predictable, we need access to artificially intelligent agents to support us in evaluating options. At the same time, with the number of “intelligent,” “living” digital creatures surrounding us also increasing exponentially, we might even have to fight for attention and personalization.

It is therefore not accidental that the Onlife Manifesto recommends, “Societies must protect, cherish and nurture humans’ attentional capabilities,” and concludes “more collective attention should be paid to attention itself.”

1.3.3 Technologies to Enhance Human Cognitive Limitations

Future citizens will have to take a lot more decisions than they do today and they will have to do this a lot more frequently. Alternatives are becoming not only progressively more complex and their characteristics concealed and convoluted, but in addition one's experience, perception of the world, and even one's own reality becomes increasingly diminished and subject to manipulation. If today's citizens feel powerless to participate in the decision making process and their voice having no reasonable possibility to be heard, how would citizens of the future feel like if we do not address these problems? The question is what would it take to design new systems of governance in which people's authentic and real wishes can be taken into account. Future citizens should somehow become capable of harvesting their collective intelligence and their collective wisdom rather than allowing personal interests and pathetic behaviors of individuals prevail in the decision making process.

Within the next decade we ought to develop tools that would allow us to browse and interact not only with information but also with simulations and predicted futures that might emerge depending on the choices we might make. Certainly, we will be forced to rely almost exclusively on technology. New forms of systemic vulnerabilities will arise from the increasing reliance on informational infrastructures. Power games in online spheres can also lead to undesirable consequences, including the disempowering of people through data manipulation. The repartition of power and responsibility among public authorities, corporate agents, and citizens should be more balanced. Research and tools to combat these threats become an absolute priority.

Finally, since technology will be essential, the democratization of the processes of design and development of new technologies becomes a requirement. We must guarantee access and simplicity of interfaces.

2 Should We Re-Engineer the Concept of Life in the Computational Era

The distinction between life and death, between the living and the nonliving, has always been blurred in the spheres of the divine and the imagination. By contrast, biology has offered a distinctive definition that has worked well for many centuries and served research advancements and developments. This simple definition distinguishes the living by its capacity to grow (through metabolism), respond (to stimuli), adapt (through natural selection), and reproduce. A more accurate definition describes life with seven properties: (a) made up of cells; (b) capable of reproduction; (c) based on genetic code; (d) exhibiting growth and development; (e) needing materials and energy; (f) responsive to its environment; and g) maintaining an internal balance. Interestingly, the concept of an inevitable death is not usually included in the properties of life; it is nonetheless implied.

While researchers operate with the above definition, they also often use terms that portray something as if it were alive, even with the knowledge that it may not

meet all the above criteria. Researchers do this with a conscious understanding that the distinction is known and that people are aware of it. There are a number of archetypal examples, which we introduce briefly in the next paragraphs.

Are Seeds or DNA Alive? Seeds are made of cells. They can, in principle, develop into living organisms that metabolize and grow; they have a genetic code; and they maintain their internal balance. In many ways, a seed may be considered to be alive. There is a definite period of viability when, if not planted and germinated, a seed will eventually die. Some seeds survive only a few days, whereas seeds recovered from cold peat bogs have germinated after thousands of years. Nonetheless, seeds do not grow and do not respond to stimuli (at least, not in detectable ways). Therefore, they are not alive, as such, but they are *potentially alive*. In analogous ways, Deoxyribonucleic acid (DNA), as the code of life, is also only potentially alive because it also does not meet several of the above criteria for living organisms. For example, it does not develop or grow and does not metabolize. Nevertheless, it manages to replicate and propagate and thereby secure the continuation of life. In both cases, these two entities carry life within them, but they are not alive as such. Nevertheless, the recent complete sequencing of the DNA of a horse that has lived 780,000 years ago by Ludovic Orlando and Eske Willerslev (Orlando and Willerslev 2013) opens the door for bringing back to life pre-historic humans therefore challenging the concepts of life and death.

Is Plato Alive Today? Many might argue that Plato (like countless others) is alive today, at least in the minds of the millions of people who have *read, internalized, and reproduced* his ideas and philosophy. In some sense, he could therefore be considered alive. Speaking more precisely, his ideas are alive but not he himself. His ideas continue to develop and grow in the sense that they “metabolize” ideas coming from contemporary authors and use them to grow. His ideas *respond* in undeniable ways when confronted with present-day challenges; some of his ideas *adapt* to contemporary realities and therefore survive longer, and they are continually being *reproduced*. One could argue that they could be coded and that they manage to maintain their internal cohesion. Where, then, is the line drawn in the distinction between alive and dead? Even though his ideas meet many of the conditions of life, they cannot be regarded as a living organism, because they are not constrained within a finite body made out of cells, among other reasons. It is not in Plato’s mind that his ideas continue to live. Instead, they evolve and propagate only in the minds of so many others.

The distinction implicitly made above is that whatever processes are the objects of study, they must take place within the original entity (in the above case, in Plato’s mind). Is this a necessary requirement in our era, however? Clark and Chalmers, advocates of the extended mind hypothesis (Clark and Chalmers 1998), would argue that the container of Plato’s ideas (i.e., his mind) has simply changed (to the minds of many). What, then, if technology allows a person’s mind to work while inside a different host (e.g., a constrained silicon circuit or a distributed network) after the body of that person dies? Would that entity meet the criteria used to describe something as being alive? It would be the same mind, and for all practical considerations

capable of learning, reacting, developing, and adapting eternally. It will, however, violate the requirement that a living organism is made up of cells. If we choose to stick to this requirement, we can postpone the need to re-engineer our concepts.

Computer technology and ICT in particular have created conditions for digital as well as physical artifacts to not only remain “alive” for very long (virtually indefinite) periods, but also, more importantly, to be able to express many of the properties previously reserved only for the living. The invention of the internet has kindled irreversible transformations in at least two dimensions. In one dimension, it created a grid that connects people, knowledge, and machines. The internet of things added the nonliving, the environment, and even nature at large to this grid. In another dimension, the internet facilitated the development of new technologies and new spaces. Virtually unlimited data, information, and knowledge, as well as the products of thoughts (e.g., digital footprints) and actions (e.g., traces of actions while browsing through or interacting in cyberspace), are, for all practical purposes, immortal. Sooner than many imagine, rudimentary versions of “human minds” will be capable of continuing their own lives, “interacting” with other people or beings and environments and learning from their actions. These developments invite humanity to rethink many of the concepts previously considered invariable, as summarized in the following questions and discussed in some more detail in the following sections:

- What does it mean to be alive? (Does the concept of life need to be revisited?)
- What does it mean to be human? (Is the human really something more than just information? If yes, then what?)
- If the processes responsible for the emergence of the mind become immortal, can the mind then be separated from its container?
- If humans become immortal, what are the consequences for sustainability?

2.1 What Does It Mean to Be Alive?

This foundational question cannot receive a definitive answer using today’s concepts, but addressing it is useful for dealing with the challenges. Nevertheless, to continue to teach the seven properties of life as if they were sufficient to describe the living is not only counterproductive, it is also misleading.

2.2 What Does It Mean to Be Human?

The 1999 movie *Bicentennial Man*, based on Isaac Asimov’s novella published in 1975, and the movie *A.I.*, written, directed, and produced by Steven Spielberg in 2001, have already provoked people into rethinking not only whether a humanoid is alive, but also, more importantly, whether a humanoid should be granted rights reserved only for humans. Furthermore, taking up Hannah Arendt’s task of

reconsidering “the human condition from the vantage point of our newest experiences and most recent fears,” the discovery that humans may be nothing more than information calls precisely for a re-engineering of the concept of what it means to be human in the computational era. This discussion invites us to reflect upon ourselves and not only define whatever makes us human but also, more importantly, to identify those special characteristics that clearly distinguish us from non-humans and which we would like to preserve (Laouris 2013).

2.3 Mind and Body

Can the mind exist without a body? Aristotle proposed that the mind (soul) cannot exist outside a body and dies with it, whereas Descartes maintained a rigid distinction between the realms of mind and matter. Scientists today describe light as being both wave and particles, and quantum mechanics has questioned the foundations of physics as we knew it for centuries by proposing that particles exist in all states at once (in coherent superposition) and that a cat can be alive and dead at the same time! The deliberations that led to the Onlife Manifesto have also encouraged the members of this think tank to favor dualities over the classical oppositional dichotomies. Consequently, if we manage 1 day to upload a human mind to a machine (or the net), it will mean that the mind can be separated from the body but at the same time will be an admission that the mind requires a body, albeit a different one. All the same, the challenges and implications will be the object of many studies to come.

2.4 Immortality and Sustainability

One could argue that were humans to live longer or even become biologically immortal, that would be devastating for the environment and for sustainability. Moreover, many ethical questions arise, such as whether humans have the right to live longer than other creatures, whether people should establish rules and conditions to terminate life or agree to euthanasia, and how to determine who or what should live and die.

2.5 Grand Challenges Towards Achieving Immortality

Scientists and technologists aspire to achieve immortalities of different types using completely different theoretical groundings and technologies. Each approach poses different conceptual challenges.

2.5.1 Challenge #1: Decelerate or Stop Biological Aging

Scientists work on many different paths to decelerate or completely end the process of biological aging. To begin with, we use different definitions for aging, which of course impose different points of intervention. These, in turn, have different effects on the need to reconsider relevant concepts. For example, if aging and cell death are pre-programmed, then breaking that code opens up questions about whether someone placed that code there for a reason and whether breaking that code brings us close to that creator. By contrast, if aging is simply a process of metabolic and cellular burnout and overuse, we may not need to reconsider any concepts. Moreover, if we view aging as a multidimensional process of physical, psychological, and social change, then all of these changes need to be taken into consideration when talking about aging. For example, according to Kyriazis (Kyriazis 2003, 2005), chaos theory and entropy imply that more information will lead to more intellectual complexity, as well as more biological redundancy, i.e., less risk of aging and death.

2.5.2 Challenge #2: Replace Biological with Manufactured Tissues

This has already begun, with heart pacemakers, metallic joints, bionic limbs, eye and ear transplants, etc. Research also goes one step further in enhancing human capabilities by using technologies that are not necessarily designed as human homomorphs, as in the case of exoskeletons. Are emerging cyborgs or, eventually, robots still human? Should we draw a line or accept, as Minsky (Minsky 2004) suggested, “robots will inherit the earth, but they will be our children”?

2.5.3 Challenge #3: Regenerative Medicine

A term attributed to William Haseltine (founder of Human Genome Sciences; (Viola et al. 2003)), regenerative medicine refers to the “process of replacing or regenerating human cells, tissues, or organs to restore or establish normal function” (Mason and Dunnill 2008). The theoretical and technological approaches range from attempts to regenerate damaged tissues and organs in the body and/or stimulating the body’s own repair mechanisms to heal previously irreparable tissues or organs, to replacing damaged tissue or organs either by growing (manufacturing) them in the lab using scaffolding technologies or “printing” (see also below) them layer by layer.

Repairing the Body from Inside At first glance, the idea that nanorobots inside our body will repair whatever needs to be repaired does not affect our concepts of life, human, or identity. What, however, if these robots are controlled from outside? What about the concept of free will, for example?

Manufacturing Organs Organs are engineered using decellularizing a living organ (removing cells to leave a clean extracellular structure) to keep only the skeleton. Stem cells are grown within the structure and re-create the organ. Artificially cre-

ated structures are also being used as scaffolds to engineer, for example, heart valves or bladders. Three-D organ printers are also no longer science fiction. For example, Anthony Atala at the Wake Forest Institute for Regenerative Medicine (see, for example, (Nakamura et al. 2005; Xu et al. 2009)) has been trying to print heart valves, kidneys, livers, and other tissues using a technology analogous to ink-jet printers, injecting human cells instead of nano-sized droplets of ink. The idea of manufacturing or “printing” human organs to replace those aging or malfunctioning opens up new conceptual challenges with regard to what it means for an organ to be alive, the constancy of the identity of the recipient, and even the mind-body question. What’s more, the idea that someday we might develop printers that “print” printers (i.e., reproduction) challenges the very concept of life.

2.5.4 Challenge #4: Transfer the Mind to a Machine

This usually refers to the process of transferring or copying a conscious mind from a brain to a non-biological substrate. Even though still considered by many as far-fetched science fiction, in some ways it has already begun. In the not-too-distant future, digital agents may represent us to some extent, behaving and acting like us. With the added functionality of learning from their mistakes, they will have a life of their own. Thus, a rudimentary self will continue to live in cyberspace even after our death. Once we have reached the point when an entirely, conscious self can be transferred, we will have managed to transfer the human mind to a machine. At that point, we will face new questions, such as, what happens if the biological equivalent continues to live?

2.6 Policy Implications

2.6.1 Life Extension

In a world in which artifacts and information survive much longer than the human body, there will be increasing pressure to also extend the human lifespan. As Floridi (Chapter “Commentary by Ganascia”) observes, “more people are alive today than ever before,” while at the same time about 100,000 people die every day because of aging. Anticipating a significant prolongation of the human lifespan or wishing for immortality opens up a Pandora’s Box of countless challenges related to evolution and sustainability. Research that aims at the prolongation of life expands in different directions, ranging from DNA manipulations to manufactured biological or bionic organ replacements, to nano-technology and stem cell-technology based treatments. The ethical and sustainability challenges that accompany these developments require not only relevant research but also appropriate attention and policies (Hildebrandt: Chapter “Hyperhistory and the Philosophy of Information Policies”). We might have to reconsider the right to live longer than other creatures on earth (or in the universe), the right to interfere with nature, and the right to take evolution into human hands.

2.6.2 Authentic Participation in Decision Making and Governance

Today's technologies enable many more people to live longer and better lives and therefore to be able to interact with each other for longer periods. Such technologies also allow them to share and interact in multiple public (real and virtual) spaces. This increased connectivity, in conjunction with greater access to information and knowledge, inevitably enables more people to participate in debates and decisions. Such developments also increase the possibilities for disagreements and conflicts, however. The science of structured dialogic design discussed in part one of this chapter predicts that the capacity of a community of stakeholders to implement a plan of action effectively depends strongly on the genuine engagement of all those whose lives might be affected (Flanagan and Christakis 2009; Laouris 2012) and that disregarding their participation is not only unethical but also means that any plans made are bound to fail (Laouris et al. 2008). Therefore, the concept and the means to such authentic participation will need to be reconsidered and redefined. We are in urgent need of technologies that would enable massive collaboration to accelerate decision making (Laouris and Christakis 2007) and, consequently, positive social change. The struggle to extend public spaces, in which humans interact and increase affordances and freedoms, must be accompanied by parallel developments in methodologies and technologies that can effectively guarantee that wisdom will always prevail in our choices and actions.

2.6.3 Access to Technologies

The intelligence, size, and every other physical and mental characteristic of all species follow normal distributions with restricted standard deviations. Technological developments that significantly enhance humans might, even in the short term, significantly distort these distributions, especially if the economic, social, educational, and other gaps between the rich and the poor on the planet remain as large as they are. Despite the technological progress, elderly people and people with disabilities (COST Action-219ter 2010; Laouris and Michaelides 2007) as well as the public at large (COST Action-298 2007; Laouris et al. 2007) do not benefit sufficiently. Therefore, societies need to pay increasingly more attention to issues of access, accessibility and wide participation.

2.6.4 Privacy in a Globally Connected World

Data and information immortality pose enormous challenges to the concept of privacy. Privacy has two aspects: the power to control what information the individual wishes to reveal and the power to erase information that belongs to or concerns the individual. While the first becomes increasingly complicated, the second is virtually impossible today because of legal and technological constraints. For example, how are future humans protected from invisible manipulations that can take place

via extensions of or attachments to their body and mind? Nothing remains strictly private or public. Privacy depends on the circumstances or even on one's financial caliber. How is privacy defined when it comes to artificial agents or interfaces connecting human brains with other brains or systems? The legal system and people's wisdom in general will need to catch up with developments in technology if they are ever going to be able to tackle questions of decision making and privacy in a globally connected world.

2.6.5 The Right to Digital Euthanasia

The feasibility of life extension increases the challenges to privacy because the chances that an individual might wish to delete something about him- or her-self from the net undoubtedly grows with increasing life spans. Trying to solve this problem, which at first glance appears rather technical, creates enormous new challenges. The power to decide to erase any type of information from the internet is one of the greatest controversies in the discussions regarding EU Data protection regulation. In addition, the technical aspect is a lot more complicated than one would imagine. This is because in order to be able to trace and delete data that an individual has created, it would be necessary for the data produced by any individual (human or nonhuman) to bear some kind of signature and/or leave footprints behind, even when the data are copied, moved, or otherwise processed by others at any later stage. This opens a Pandora's Box of issues about privacy and anonymity. Furthermore, consider the case of more complex digital creatures, originally created by someone. If a digital agent evolves and acquires new knowledge, experiences, and skills, it starts to become something independent from its creator. Such possible futures force us to reconsider popular worldviews and the concept of what it means for a being to be alive or dead (or somewhere in between) or for a being to exist or not to exist (or something in between), as well as who has the right to decide about the life, death, existence, or extermination of such forms of life/information.

2.7 *What Is Human?*

With the blurring between the living and the nonliving, between biologically-nature-made and technologically-nature-made artifacts, comes an urgent need to identify explicitly the true and deep characteristics that define the human and distinguish people from the nonhuman. For example, only humans are concerned with the meaning of life and the inevitability of death. Moreover, the search for gratification and the ability to create conditions to develop rights and codes of ethics are found only in humans, although there are rudimentary versions in some primates and dolphins. As far as we knew until recently, only humans experience dreams while they sleep, have a theory of mind, and express and understand humor and irony. These are just a few examples of characteristics generally reserved for humans. The ques-

tion is whether we invest enough in research to understand the effects of hyper-connectivity and of the extension of public spaces with practically infinite parallel virtual spaces on these presumably human properties. How many government policies or societal priorities care and protect the characteristics that are fundamental to the concept of being human? It must be top priority not only to research and understand, but more importantly to nurture and safeguard whatever truly distinguishes humans from everything else in this universe.

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Part VI
Complexity, Responsibility and
Governance

Distributed Epistemic Responsibility in a Hyperconnected Era

Judith Simon

1 Introduction

To explore what being human in a hyperconnected reality could mean, we may start with Hannah Arendt's challenge to reconsider "the human condition from the vantage point of our newest experiences and most recent fears" (Arendt 1958) as was suggested in the background note to the ONLIFE Initiative. A core experience in our contemporary socio-technical lifeworld—often resulting in fear—concerns responsibility and accountability: namely, the difficulty to attribute responsibility and to locate accountability in ever more distributed and entangled socio-technical systems. Think small: about the difficulties of finding and reaching the person to make responsible in case of a non-functioning internet connection? Think big: who is responsible—accountable and liable—for the financial crisis?

Computer technology and ICT in particular has deepened and aggravated these issues. Think of artificial agents, search engine algorithms, the personal data handling of social networking sites; think of drones, robots in military and health-care or unmanned vehicles, think of algorithmic trading: who is responsible and especially if things go wrong—who is to blame: designers, users, the technologies or rather the distributed and entangled socio-technical systems? What are the normative implications and who is in charge and able to set the regulative frameworks?

On the one hand these are issues to be tackled by policy makers: regulations are needed for algorithmic trading, for drone deployments, for the design of electronic patient record systems—and for an overabundance of constantly emerging new issues related to the attribution or assumption of responsibility in socio-technical environments. On the other hand, there are actions and decisions to be taken by each and every one of us in our daily lives. When meandering on the Web, where can

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we place trust and where should we be vigilant? How can we and how should we assume responsibility ourselves and how can we attribute it to others?

In this contribution I specifically focus on the responsibilities in processes of knowing. I argue that concerning these so-called *epistemic responsibilities* we are also facing new challenges in a hyperconnected reality, which require thought and action both on a macroscopic level as well as on a microscopic level. While reconsidering received notions of responsibility, it is therefore advised to distinguish two relevant perspectives:

- 1) the individualistic perspective, focusing on individuals acting as knowers within increasingly complex and dynamic socio-technical epistemic systems. The leading question here is: what does it mean to be responsible in knowing?
- 2) the governance perspective, focusing on the question how systems and environments should be designed so that individuals can act responsibly. The leading question here is: what does it take to enable responsibility in knowing?

Clearly, these two perspectives are related. Actors acting within environments shape these environments through their action just as much as those with an explicit governance mandate are themselves often part of the environments they intend to design and govern. Nonetheless, the distinction enables fleshing out different tasks and duties—different responsibilities—related to either acting within systems or designing and governing systems.

2 Knowing Today

Our ways of knowing, be it in research or in everyday-life are on the one hand highly social: much of what we know, we know through the spoken or written words of others; research consists not only in collaboration, but also in building upon previous knowledge, in communicating information, in communal quality assessment of scientific agents or content (e.g. peer review), etc. On the other hand, technology, particularly information and communication technologies mediate and shape these practices of knowing to profound extends. We check Wikipedia to find information about a city we plan to visit or some information about a historical incident, we rely on search engines to deliver relevant information on a specific topic, we use ratings of other agents explicitly to assess the quality of products before buying them or implicitly by accepting the ordering of search results or recommendations. Thus, contemporary epistemic practices have to be conceived as socio-technical epistemic practices.

Within these entangled socio-technical processes of knowing, we rely in numerous more or less transparent ways on other agents, human agents as much as non-human agents, infrastructures, technologies. However, what does this mean for the two main issues addressed in this paper, i.e. what are the implications of this socio-technical epistemic entanglement for (1) being responsible in knowing

(individual perspective) and (2) for enabling responsibility in knowing (governance/design perspective)?

While the former issue is of relevance to each and every one of us, the latter is of special concern for policy makers. Particularly interesting cases for the governance perspective are the so-called *Responsible Research and Innovation* initiatives which have been proposed by several national research councils in Europe (e.g. in the UK, the Netherlands and Norway) as well as by the European Commission.

3 Responsible Research and Innovation

The *Responsible Research and Innovation* strategy of the European Commission is part of the prospective EU Framework Programme Horizon 2020 as a successor to the *Science in Society* strand of the current Framework Programme FP7. By combining the word *responsible* with *research* and *innovation* as two particularly knowledge-intensive domains, it could be expected that RRI will deliver at least some answers to the before mentioned challenges regarding responsibility—particularly epistemic responsibility—in a hyperconnected era.

So what is RRI about? According to a recent leaflet by the European Commission: “(r)esponsible Research and Innovation means that societal actors work together during the whole research and innovation process in order to better align both the process and its outcomes, with the values, needs and expectations of European society. RRI is an ambitious challenge for the creation of a Research and Innovation policy driven by the needs of society and engaging all societal actors via inclusive participatory approaches.”¹

More specifically, the RRI framework consists of six key areas: (1) engagement, (2) gender equality, (3) science education, (4) open access, (5) ethics and (6) governance, the last one being an umbrella term for the first 5 areas.² On the website of the European Foundation Center the same first five areas of key relevance for RRI are also identified, area (6) on governance, however, is missing while they list *science communication* and *career* as two additional key areas of RRI. On this latter website, each key area is followed by short explanation. For instance, *public engagement* refers to the “engagement of people and civil society organizations in the research and innovation process and the integration of society in science issues” and *careers* to “making careers in science and technology attractive to young students”.³

Two observations may be illuminating: First of all, it seems that most of these guidelines focus on what may be considered *professional ethics* or *business ethics*,

¹ http://ec.europa.eu/research/science-society/document_library/pdf_06/responsible-research-and-innovation-leaflet_en.pdf (Accessed 28 June 2013).

² http://ec.europa.eu/research/science-society/document_library/pdf_06/responsible-research-and-innovation-leaflet_en.pdf (Accessed 28 June 2013).

³ http://www.efc.be/news_events/Pages/From-Science-in-Society.aspx (Accessed 28 June 2013).

i.e. appropriate professional behavior in practices such as hiring or communicating. What appears rather neglected, in contrast, are the ethical implications of the *epistemic practices in research and innovation themselves*. Second, despite looming large in the title of the initiative, the term responsibility is surprisingly underrepresented in the descriptions of RRI's key areas and goals. In the summary on the website of the European Foundation Center the word "responsibility" is not to be found at all. In the leaflet by the European Commission, it appears at two instances: in the section on science education, it is argued that science education is needed to "equip future researchers and other societal actors with the necessary knowledge and tools to fully participate and take responsibility in the research and innovation process"⁴ while in the section on governance it says that "(p)olicymakers also have a responsibility to prevent harmful or unethical developments in research and innovation".

If RRI shall be of some use to tackle the challenges with respect to epistemic responsibility in a hyperconnected era, then we need to improve it on two fronts. First, we need to add some meat to the notion of responsibility, to fill the term "responsible" in Responsible Research and Innovation with some content. Second, when addressing epistemic responsibility in research and innovation, we need to focus on the ethics of epistemic practices themselves, i.e. the responsibilities of epistemic agents *as* epistemic agents.

When asking what it may mean to act responsibly as an epistemic agent within socio-technically entangled systems, I will become obvious that epistemic responsibility is a topic that links epistemology to ethics. Therefore, we do not merely a subsection on ethics in Responsible Research and Innovation: we need to understand and acknowledge—both in epistemic and in political terms—that epistemic practices are inherently ethical practices.

In the next sections, I will start addressing some of the challenges we face with respect to epistemic responsibility in a hyperconnected era.

4 Approaching Distributed Epistemic Responsibility

There are various research areas that have provided invaluable insights to crucial aspects of being responsible in knowing within entangled socio-technical epistemic systems. To open up this topic, I will in the following sections briefly introduce crucial insights from three different fields of research: research on *epistemic responsibility in (social) epistemology*, research on *(distributed) moral responsibility in philosophy of computing*, and research on *distributed or entangled responsibility in feminist theory*.

⁴ http://ec.europa.eu/research/science-society/document_library/pdf_06/responsible-research-and-innovation-leaflet_en.pdf (Accessed 28 June 2013).

4.1 *Epistemic Responsibility: Insights from (Social) Epistemology*

Epistemic responsibility can be understood in terms of the duties of knowers in giving and accepting reasons. Within analytic epistemology, for instance, it is discussed whether and to what extent epistemic responsibility is a condition for epistemic justification and knowledge. Some theoreticians focus on very basic questions concerning our duties to revise beliefs in light of new evidence, fundamentally related to the topic of doxastic voluntarism, i.e. the question whether we can voluntarily control our beliefs. Others address the question of what being a good informant implies (Craig 1990), focus on concepts of epistemic praiseworthiness and blameworthiness and relate epistemic responsibility to moral responsibility (Corlett 2008), or assess what our responsibilities are in granting authority to sources of information (Origi 2008). While the topic of epistemic responsibility can be addressed with respect to different sources of knowledge, such as memory or perception, it is most interesting in the context of testimonial knowledge practices, i.e., practices related to receiving knowledge through the spoken or written words of others.

In recent years, testimony has emerged as a central topic within social epistemology, the philosophical discipline addressing the various ways in which knowledge is social. In contrast to the abundance of publications on testimony (e.g. Coady 1992; Fricker 2007; Adler 1994) and related topics such as epistemic trust (e.g. Origi 2004; Simon 2010), epistemic authority (e.g. Origi 2008), epistemic injustice (especially Fricker 2007), epistemic responsibility itself has only very recently attracted attention within analytic social epistemology.⁵

Although insights from social epistemology, in particular those addressing epistemic practices in more applied settings are highly crucial for a notion of epistemic responsibility for the 21st century, there are several shortcomings: First and foremost, due to this origin in the debates around the epistemology of testimony, the focus of attention in this discourse of epistemic responsibility is also mostly on epistemic interactions between human agents, i.e. on the responsibilities of speakers and hearers in testimonial exchanges. Yet, taking into account that processes of knowing take place in increasingly entangled systems consisting of human and non-human agents, systems in which content from multiple sources gets processed, accepted, rejected, modified in various ways by these different agents, the notion of epistemic responsibility needs to be modified and expanded to account for such socio-technical epistemic processes. Two issues need to be addressed in more detail than is currently the case in most analytic accounts of epistemic responsibility: (a) the role of technology and (b) the relationship between power and knowledge.⁶ To

⁵ Confer for instance the conference on “Social Epistemology and Epistemic Responsibility”, which took place at Kings College in May 2012. <http://www.kcl.ac.uk/artshums/depts/philosophy/events/kclunc2012.aspx> (Accessed 18 September 2013).

⁶ It would be inadequate to argue that the role of technology or the role of power have been entirely neglected in social epistemology. On the one hand, there have been attempts to account for ICT

put technology in general and ICT in particular into the equation, we should turn to philosophy of technology and philosophy of computing. Regarding the relationship between power, knowledge and technology, it has been feminist theoreticians in particular who have provided highly valuable insights. Thoughts from both fields will be briefly introduced in the next two sections.

4.2 *Responsibility & ICT: Insights from the Philosophy of Computing*

The complexity and entanglement of social and technical compounds in many digital systems has led to difficulties in locating agency, accountability and responsibility, which various philosophers of computing and computer ethicists aim to tackle. Unsurprisingly, there is a growing amount of research on moral and legal responsibility in computing (cf. Coleman 2004), specific foci being autonomous agents (e.g. Coeckelbergh 2009) and robotics (e.g. Pagallo 2010). With respect to accountability, Nissenbaum's (1997) paper on accountability in a computerized society is surely an early seminal piece, in which different causes for contemporary difficulties in accountability attribution are already worked out: the problem of many hands, the problem of bugs, using the computer as a scapegoat, and ownership without liability.

Of particular importance for the goals of this paper are Floridi and Sander's (2004) early considerations on *the morality of artificial agents* as well as Floridi's more recent analyses regarding *distributed morality* (Floridi 2012). According to Floridi and Sanders (2004) something qualifies as an agent if it shows *interactivity*, *autonomy* and *adaptability*, i.e. neither free will nor intentions are deemed necessary for agency. Such a concept of "mind-less morality" (Floridi and Sander 2004, p. 349) allows addressing the agency of artificial entities (such as algorithms) as well as of collectives, which may form entities of their own (such as companies or organizations). Another merit of their approach lies in the disentanglement of moral agency and moral responsibility: a non-human entity can be held accountable if it qualifies as an agent, i.e. if it acts autonomously, interactively and adaptively. However, it cannot be held responsible, because responsibility requires intentionality. That is, while agency and accountability do not require intentionality, responsibility does. Therefore, it seems that non-human agents—as long as they a) do not exhibit intentionality and b) are considered in separation—cannot be held *responsible* even if they are *accountable* for certain actions.

(e.g. some works by Alvin Goldman (2008) and Don Fallis (2006), the special issue of the journal EPISTEME (2009, volume 6, issue 1, on Wikipedia). Moreover, Fricker's book on "Epistemic Injustice" (2007) has also stirred a lot of interest in the relationship between power and knowledge. However, these developments are rather recent and the classical assessment of testimonial processes remains focused on communication between humans often still conceived as an unconditioned and a-social subject S, who knows that p.

While these considerations on responsibility and accountability in socio-technical systems are highly developed, the specific problem of *epistemic* responsibility in ICT has not yet been in the focus of attention within philosophy of computing. Hence, it appears worthwhile to take the best from both fields of research to develop a sound notion of epistemic responsibility within entangled socio-technical epistemic environments. Yet, instead of starting from scratch taking a look at feminist theory proves highly illuminating, because different feminist theoreticians have not only focused on the responsibilities of knowers in complex environments. They have also emphasized the important relationship between knowledge and power.

4.3 Epistemic Responsibility in Entangled Socio-Technical Systems: Insights from Feminist Theory

Despite the fact that epistemic responsibility has only very recently attracted attention within analytic epistemology, the term itself has already been used in 1987 as the title of a book by Lorraine Code (Code 1987). In this book, Code addresses the concepts of responsibility and accountability from a decidedly feminist perspective and argues that in understanding epistemic processes in general and epistemic responsibility and accountability in particular; we need to relate epistemology to ethics. Criticizing the unconditioned subject S who knows that p, “the abstract, interchangeable individual, whose monologues have been spoken from nowhere, in particular, to an audience of faceless and usually disembodied onlookers” (Code 1995, p. xiv), Code emphasizes social, i.e. cooperative and interactive aspects of knowing as well as the related “complicity in structures of power and privilege” (Code 1995, p. xiv), “the linkages between power and knowledge, and between stereotyping and testimonial authority” (Code 1995, p. xv).

While Code’s work highlights the relationship between knowledge and power, research by Karen Barad and Lucy Suchman adds technology to the equation and therefore appears particularly suited to explore the notion of epistemic responsibility within entangled and distributed socio-technical systems:

Barad’s “agential realism” (Barad 1996; Barad 2007) delivers an “[...] epistemological-ontological-ethical framework that provides an understanding of the role of human and nonhuman, material and discursive, and natural and cultural factors in scientific and other social-material practices” (Barad 2007, p. 26).

Barad’s approach is theoretically based upon Niels Bohr’s unmaking of the Cartesian dualism of object and subject, i.e. on the claim that within the process of physical measurement, the object and the observer, Barad’s “agencies of observation”, get constituted by and within the observation process itself and are not pre-defined entities. The results of measurements are thus neither fully constituted by any reality that is independent of its observation, nor by the methods or agents of observation alone. Rather, all of them, the observed, the observer and the practices, methods and instruments of observation are entangled in the process of what we call “reality”. For Barad, reality itself is nothing pre-defined, but something

that develops and changes through epistemic practices, through the interactions of objects and agents of observation in the process of observation and measurement. Reality in this sense is a verb and not a noun.

Yet, *interaction* is a problematic term in so far as it presupposes two separate entities to interact. Thus, to avoid this presupposed dualism, she introduces the neologism of “intra-action”, to denote the processes taking place within the object-observer-compound, the entanglement of object and observer in the process of observation. This terminological innovation is meant to discursively challenge the prevalent dualisms of subject-object, nature-culture, human-technology, and aims at opening up alternative, non-dichotomous understandings of technoscientific practices.

A crucial concern of Barad is the revaluation of *matter*. Opposing the excessive focus on *discourse* in some other feminist theories, Barad emphasizes the relevance of matter and the materiality of our worlds. Taking matter serious and describing it as active, means to allow for non-human or hybrid forms of agency, a step that has been taken already with the principle of generalized symmetry in Actor-Network-Theory. Yet, if we attribute agency to non-human entities, can and should they be held responsible and accountable? Plus, isn't that an invitation, a *carte blanche* to shirk responsibility by humans? Do we let ourselves off the hook too easily and throw away any hopes for responsible and accountable actions?

It appears that Barad's view on non-human agency and her stance towards the ontological symmetry between humans and non-humans has changed from earlier articulations (Barad 1996) to later ones (Barad 2007). In 1996, she still underscores the human role in representing, by stating that “[n]ature has agency, but it does not speak itself to the patient, unobtrusive observer listening for its cries—there is an important asymmetry with respect to agency: we do the representing and yet nature is not a passive blank slate awaiting our inscriptions, and to privilege the material or discursive is to forget the inseparability that characterizes phenomena” (Barad 1996, p. 181).

However, it seems that this special treatment of humans and especially the notion of *representing* does not well match her posthumanist performativity, as depicted some years later (Barad 2003). Finally, in “Meeting the Universe Halfway” Barad offers a more nuanced dissolution of the distinction between human and non-human agency. By stating that “[a]gency is a matter of intra-acting; it is an enactment, not something that someone or something has” (Barad 2007, p. 261), Barad moves the locus of agency from singular entities to entangled material-discursive apparatuses. But even if agency is not tied to individual entities, it is bound with responsibility and accountability, as Barad makes very explicit: “Learning how to intra-act responsibly within and as part of the world means understanding that we are not the only active beings—though this is never justification for deflecting that responsibility onto other entities. The acknowledgment of “nonhuman agency” does not lessen human accountability; on the contrary, it means that accountability requires that much more attentiveness to existing power asymmetries (Barad 2007, p. 218 f).

Thus, the possibility to understand agency not essentialist as a (human) characteristic, but as something which is rather *attributed* to certain phenomena within

entangled networks *could* be regarded as an invitation to shirk of responsibility. But this is clearly not the aim of Barad. When developing her posthumanist ethics, Barad concludes that even if we are not the only ones who are or can be held responsible, our responsibility is even greater than it would be if it were ours alone. She states: “We (but not only “we humans”) are always already responsible to the others with whom or which we are entangled, not through conscious intent but through the various ontological entanglements that materiality entails. What is on the other side of the agential cut is not separate from us—agential separability is not individuation. Ethics is therefore not about right response to a radically exterior/ized (sic!) other, but about responsibility and accountability for the lively relationalities of becoming of which we are a part” (Barad 2007, p. 393).

This focus on responsibility and accountability relates back to Barad’s initial framing of agential realism as an “epistemological-ontological-ethical framework”, a term by which she stresses the “[...] fundamental inseparability of epistemological, ontological, and ethical considerations” (Barad 2007, p. 26). Barad insists that we are responsible for what we know, and—as a consequence of her onto-epistemology for what *is* (Barad 2003, p. 829). Accountability and responsibility must be thought of in terms of what matters and what is excluded from mattering, what *is known* and what is not, what *is* and what is not.

This acknowledgement that knowledge always implies responsibility, not only renders issues of ethics and politics of such knowledge- and reality-creating processes indispensable. It also relates directly back to Barad’s emphasis on performativity: epistemic practices are productive and different practices produce different phenomena. If our practices of knowing do not merely represent what is there, but shape and create what is and what will be there, talking about the extent to which knowledge is power or entails responsibility gets a whole different flavor.

Lucy Suchman shares many concerns of Karen Barad and her insights promise to be of particular importance for considerations regarding computationally mediated environments due to Suchman’s background in Human-Computer Interaction. Acknowledging the relational and entangled nature of the sociomaterial, Suchman claims that agency cannot be localized in individual entities, but rather is distributed within socio-material assemblages. Resonating with Barad, she notes “[...] agencies—and associated accountabilities—reside neither in us nor in our artifacts but in our intra-actions” (Suchman 2009, p. 285).

The question, however, remains how *exactly* to be responsible, how to hold or to be held accountable if agency is distributed. How can we maintain responsibility and accountability in such a networked, dynamic and relational matrix? Although I think that Suchman goes into the right direction, she remains quite vague about this in her concluding remarks of *Human-Machine-Reconfigurations* by stating that “responsibility on that view is met neither through control nor abdication but in ongoing practical, critical, and generative acts of engagement. The point in the end is not to assign agency either to persons or to things but to identify the materialization of subjects, objects, and the relations between them as an effect, more and less durable and contestable, of ongoing sociomaterial practices” (Suchman 2009, p. 285).

5 Facing Distributed Epistemic Responsibility

To understand the epistemic responsibilities of knowers in our contemporary, hyperconnected world, I think all insights outlined above need to be accounted for. Yet it still has to be explored and discussed in detail a) whether, how and to what extent they can be aligned and b) what the implications both on an individual and a governance level could or should be. That means that we need conceptual advancements as well as practical solutions and guidance both for individuals and policy makers. Before I turn to both tasks, let me recapitulate the challenges regarding epistemic responsibility in our hyperconnected era.

As knowers we move and act within highly entangled socio-technical epistemic systems. In our attempts to know, we permanently need to decide when and whom to trust and when to withhold trust, when to remain vigilant. Loci of trust in these entangled and highly complex environments are not only other humans, but also technologies, companies, or organizations—and they usually cannot be conceived in separation but only as socio-technical compounds. This holds true for our daily life, imagine just the case of someone booking a flight online. It holds even more true for scientific environments, where information acquisition and processing involve various hyperconnected agents and institutions.

Socio-technical epistemic systems are highly entangled but also highly differentiated systems consisting of human, non-human and compound or collective entities each equipped with very different amounts of power. To understand this, search engines are a useful example. In highly simplified terms, search engines can be conceived as code written, run and used by human and non-human agents embedded in socio-technical infrastructures as well as in organizational, economic, societal and political environments. While there are potentially many ways to enter the World Wide Web, search engines have emerged as major points of entrance and specific search engines nowadays function as “obligatory passage points” (Callon 1986), exerting tremendous amount of not only economic, but also epistemic power.

That is to say that the fact that both human and non-human entities can qualify as agents does not imply that we have entered a state of harmony and equality: there are enormous differences in power between different agents. To use Barad’s terminology, some agents *matter* much more than others. And—for better or worse—those that matter most do not necessarily have to be human agents.

In Actor-Network-Theory (e.g. Latour 1992; Law and Hassard 1999), power is conceived as a network *effect*—a view that is highly plausible and useful in the context of search engines, recommender systems or social networking sites, because the power of specific search engines does not stem from any a priori advantage, but rather is the result of collective socio-technical epistemic practices in which we all are involved: it is our practices of knowing, of relying on and using information which influence and shape the power distributions in our environment.

It is in these sociotechnical, hyperconnected and entangled systems, that the notion of epistemic responsibility is becoming a key challenge for both policy makers and us as individual epistemic agents processing information in research just as much as in our every-day lives.

5.1 *Re-Conceptualizing Epistemic Responsibility*

Responsibility is a rich concept, a concept with many nuances, a noun that changes its meaning if coupled with different verbs. There is a difference between *being responsible* and *taking responsibility*: we can be responsible for something, but deny assuming responsibility for it. This temptation to shirk responsibility is probably as old as humankind and has led to sophisticated techniques in cutting down chains of responsibilities in law or the insurance sector. On the other hand, we may also accept the full responsibility for something, even if we are not, or at least only partially responsible. If a minister steps back, because of some misconduct in her ministry she has not even been aware of, she takes responsibility, she responds. Moreover, responsibility can be assumed oneself as well as attributed to someone else.

All these different meanings of responsibility and their intersections are crucial for understanding what it takes to be epistemically responsible in socio-technical environments consisting of human and non-human agents. For instance, before asking for criteria of *how exactly* responsibility can be assumed or attributed and further how it *should* be assumed or attributed, we may start by asking these two related but distinctive basic questions that are of increasing relevance in our computational age: (1) Can epistemic responsibility be *assumed* only by human agents or also by other agents? (2) Can epistemic responsibility be *attributed* to only human or also non-human agents?

As a first step to apprehend these questions, I suggest disentangling the notions of agency, accountability and responsibility more carefully. Both Barad and Suchman seem to use the terms responsibility and accountability interchangeably. However, taking some philosophical insights into account, it seems fruitful to maintain a distinction between these two notions. As noted before, for Floridi and Sanders (2004), agency requires interactivity, autonomy and adaptivity, but no intentionality is needed. Accountability is bound to agency only and hence also does not require intentionality of agents. However, responsibility differs from accountability exactly by requiring intentionality. Hence, if we agree with Floridi and Sanders (2004) that responsibility as opposed to agency and accountability requires intentionality, then it makes no sense to talk about responsibility with respect to technical artifacts. A car cannot be made responsible for a crash, it is the driver who is to blame—for negligence or ill-will—or maybe the manufacturer, if a technical flaw caused the crash. If an unmanned vehicle that drives autonomously, interactively and adaptively caused a crash, this car may be accountable for a crash, but it cannot be held responsible. Please note that it is only the technical artifact *in isolation*, which cannot be made responsible. For socio-technical compounds, the possibility of attributing responsibility would still be given, hence this perspective may in the end well be compatible with Barad's agential realism (Barad 2007).

To my mind, the distinction between accountability and responsibility is crucial and I think we need a strong concept of responsibility reserved for intentional agents to really account for Barad's insights regarding the entanglement between (a) the social, the technical and the epistemic, as well as (b) between epistemology, ontology and ethics. Reconsider the core distinction between *being responsible* and

taking responsibility: while Barad rightly stresses our interdependences (or rather *intradependences*), the entanglement of human and non-human agents in knowing, being and doing, the process of *assuming responsibility* is and remains an intentional act.

For epistemic responsibility this means that as responsible epistemic agents, we intentionally assume responsibility for what we claim to know. In full awareness of our socio-technical epistemic entanglement, we accept to be challenged for what we claim to know, we commit ourselves to provide evidence for our claims and to revise our beliefs in the light of new evidence. Hence, to understand and improve our processes of knowing, to be responsible knowers as individuals, we first need to acknowledge both the deep entanglements between the social, the technical and the epistemic as well as between epistemology, ethics and ontology. However, the only adequate reaction to this awareness must be to assume responsibility as an intentional act. It is only we humans (so far?) that can take this stance, hence it is our duty to assume responsibility for our interrelated ways of knowing, being and doing.

However, what is also clear is that the ease with which epistemic responsibility can be assumed differs between different socio-technical environments: in some environments assuming responsibility for what one knows is rather easy, in others it is much more difficult. Access to various types of evidence, to supporting or contradicting information is essential to become epistemically responsible in knowing. It is in this sense that supporting open access is a very important and valid aspect of Responsible Research and Innovation. More generally it means that our individual efforts must be complemented with appropriate policies that support environments in which epistemic responsibility assumption is enabled, fostered and incentivized.

5.2 *Governance for Epistemic Responsibility*

Based upon conceptual work regarding the basic meaning of concepts such as responsibility, accountability, action or intentionality, we need to come up with practical solutions to support responsibility assumption and attribution in our hyperconnected reality from a governance perspective. We need to develop policy frameworks that enable and support epistemically responsible behaviour.

How would such frameworks to be conceptualized? Take the example, I have given before, Responsible Research and Innovation (RRI), which is clearly meant to offer guidance for designing and governing environments that elicit and support responsible epistemic practices. Yet despite its name, Responsible Research and Innovation, as currently conceived, cannot fulfill these tasks properly because it fails tackling important challenges worked out in this contribution, namely a) to properly acknowledge the socio-technical entanglement of knowers, b) to properly acknowledge the interdependency of epistemological, ontological and ethical aspects of science, c) to support responsibility assumption and attribution and d) to be attentive to power asymmetries within entangled socio-technical environments.

Hence, in order to really enable and support epistemic responsibility it would be essential to revise and amend current the RRI guidelines by adding new *guiding thoughts* such as the following:

1. Acknowledge the interrelation of epistemology, ethics and ontology: knowing, doing and being are interrelated, i.e. our processes of knowing have effects on what can be done and what we are—and vice versa.
2. Keep in mind the deep socio-technical entanglement of contemporary epistemic practices: Within our practices of knowing, we depend upon other human and non-human agents just as much as these other agents depend on us.
3. Bear in mind that epistemic relations are power relations: Within socio-technical epistemic systems, different epistemic agents, human as well as non-human agents, such as algorithms, are equipped with different amounts of power.
4. ... etc

Thus, if revised appropriately, RRI could provide guidance on how to act responsibly in research and innovation as particularly knowledge-intense domains. Yet epistemic practices exist beyond research and governance supporting epistemic responsibility accordingly has to be expanded beyond advice or regulations regarding research and innovation. Each and every one of us has to assume epistemic responsibility for the things we claim to know in our everyday life as well. When and whom should we trust to know about climate change, about the war on terrorism or just about the latest unemployment numbers? How vigilant do we have to be when accepting information received from various on- and offline sources?

While these are challenges that we all face on a daily basis, they also pose challenges for the governance of socio-technical epistemic systems. In a computational age characterized by ever more powerful personalization and profiling techniques assuming epistemic responsibility becomes much harder, because we may neither be able to decide which information we receive nor which information is received about us. After all, how can we be responsible knowers if we cannot assess how trustworthy our sources of knowledge are?

Without denying the utility of personalized services, in order to act epistemically responsible in an age of extensive profiling and personalization, we need the possibility to access, understand and to even trick the systems which are accessing, understanding and potentially tricking us. As Mireille Hildebrandt stresses in her contribution, we need to develop “first (...) human machine interfaces that give us unobtrusive intuitive access to how we are being profiled, and, second, a new hermeneutics that allows us to trace at the technical level how the algorithms can be ‘read’ and contested” (Hildebrandt 2013). We need policies addressing more broadly the challenges related to distributed epistemic responsibility in a hyperconnected reality, policies to set the parameters for an environment where individuals can act responsibly, i.e. where they can both assume and attribute responsibility even if they are deeply socio-technically entangled.

To conclude: in the long run, it will be essential to develop a *concept of epistemic responsibility* that can account for the responsibilities of various differently empowered agents within entangled socio-technical epistemic systems. Moreover,

we will need to develop *policy frameworks* that provide guidance both for the individual seeking to act responsibly in knowing and for the design and governance of environments that support epistemically responsible behaviour. In addition to the goals that Pagallo has described for his notion of “good enough Onlife governance” (Pagallo 2013), these frameworks should entail *support for individuals* (e.g. education and support of digital literacy) as well as *incentives for the research and design of epistemically beneficial systems* (e.g. transparency-by-design, research on better interface design, development of tools for argumentation extraction and visualization, etc.).⁷

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Good Onlife Governance: On Law, Spontaneous Orders, and Design

Ugo Pagallo

1 Introduction

The information revolution is affecting our understanding about the world and about ourselves: we are interconnected informational organisms that share with biological organisms and engineered artefacts “a global environment ultimately made of information,” *i.e.*, what Luciano Floridi calls “the infosphere” (Floridi 2013). A crucial feature of this new environment has to do with the complex ways in which multi agent (human/artificial) systems interact. This informational complexity challenges concepts and ways of reasoning through which, so far, we have grasped basic tenets of the law and politics. The starting point of the analysis concerns the use of information and communication technologies (ICTs): whereas, over the past centuries, human societies have been ICTs-related but mainly dependent on technologies that revolve around energy and basic resources, today’s societies are increasingly dependent on ICTs and, moreover, on information as a vital resource. In a nutshell, we are dealing with ICTs-driven societies (Floridi Forthcoming).

What this huge transformation means, from a legal and political viewpoint, can be illustrated with the ubiquitous nature of the information on the internet. The flow of this information transcends conventional boundaries of national legal systems, as shown by cases that scholars address as a part of their everyday work in the fields of information technology (IT)-Law, *i.e.*, data protection, computer crimes, digital copyright, e-commerce, and so forth. This flow of information jeopardizes traditional assumptions of legal and political thought, by increasing the complexity of human societies. ICTs-driven societies are in fact characterized by a collective behaviour, which emerges from large networks of individual components, without central control, or simple rules of operation. In addition, these systems present a sophisticated signalling and information processing, through which they adapt to the

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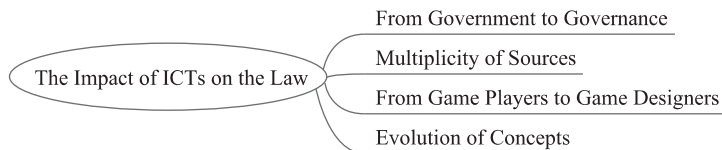


Fig. 1 The legal complexity of ICTs-driven societies

environment and, what is more, spontaneous orders evolve through such informational complexity. Although, in his seminal book *The Sciences of the Artificial* (new ed. 1996), Herbert Simon used to warn that complexity is “too general a subject to have much content,” he pinpointed cases where this approach to the complexity of the subject matter can particularly be fruitful: “particularly classes of complex systems possessing strong properties that provide a fulcrum for theorizing and generalizing can serve as the foci of attention” (Simon 1996, p. 181).

Here, we can start appreciating how the complexity of ICTs-driven societies affects canonical tenets of legal and political thought, in four different ways. Figure 1 helps me illustrate this informational approach to the complexity of current legal systems.

First, the idea of the law as a set of rules enforced through the menace of physical sanctions (e.g., Kelsen 1949) often falls short in coping with the new legal and political challenges of the information revolution: identity thefts, spamming, phishing, viruses, and cyber attacks have increased over the past decade, regardless of harsh national laws like the US anti-spam act from 2003. Furthermore, a number of issues, such as national security, cyber-terrorism, availability of resources and connectivity, are systemic, that is, they concern the whole infrastructure and environment of today’s ICTs-driven societies and, thus, these issues have to be tackled at international and transnational levels. Unsurprisingly, national law-making activism is short of breath, and this is why constitutional powers of national governments have been joined—and even replaced—by the network of competences and institutions summarized by the idea of governance. Leaving aside how this profound transformation affects the sovereignty of national states, much as democratic processes and models of political legitimacy, attention should be drawn to how often the modern state’s monopoly of power and legitimate violence is over in this context. National sovereign states, although still relevant, should be conceived as one of the agents in “the formation and stewardship of the formal and informal rules that regulate the public realm,” that is, how Hyden, Court and Mease define the notion of governance (in Grindle 2005, p. 14).

Second, the scenario of ICTs-driven societies appears increasingly complex since the quantity of information grows and its theoretical compression decreases (Chaitin 2005). To be fair, this trend is not new: some have summed it up with the very process through which pre-modern communities converted into industrial and ICTs-related societies, up to current post-industrial, or ICTs-driven, societies (di Robilant 1973). Others have traced this complexity back to the emergence of

spontaneous orders with multiple political and legal sources: for instance, in Chapter 2 of the first volume of *Law, Legislation, and Liberty* (1973), Hayek affirms that “one of our main contentions will be that very complex orders, comprising more particular facts than any brain could ascertain or manipulate, can be brought about only through forces inducing the formation of spontaneous orders” (Hayek 1982, p. 38). Whilst this latter analysis dwelt on the forces of local customs, international uses, and transnational markets, what is original today concerns the evolutionary processes of spontaneous orders that are ICTs-dependent, ubiquitous and, well, “complex.” Contemplate the political, legal and economical relevance of what scholars present as network effect (Pagallo 2006; Pagallo and Ruffo 2007; Ormerod 2012). On this basis, legislators, policy makers and, generally speaking, governance actors shall preventively understand the nature of the field in which they aim to intervene or, maybe, to interfere: in a word, today’s *kosmos* and the evolution of spontaneous orders “onlife” as opposed to the *taxis* of governance and the constructivism of political planning.

Third, the information politics of ICTs-driven societies is far more complex than ICTs-related ones because governance actors should not only be grasped as determining the rules of the game through laws, statutes, agreements, and so forth. In addition to the traditional hard and soft law-tools of governance, such as national rules, international treaties, codes of conduct, guidelines, or the standardization of best practices, the new scenarios of the information revolution have increasingly suggested the aim to govern current ICTs-driven societies through the mechanisms of design, codes and architectures. Admittedly, some of these technological measures are not necessarily digital and yet, current advancements of technology have obliged legislators and policy makers to forge more sophisticated ways to think about legal enforcement. All in all, most of today’s legal and political challenges of the information revolution have to do with the twofold features of “generative technologies” (Zittrain 2008), such as, say, the personal computers and the ways PCs ubiquitously transmit information on the internet. Although this technology allows innovation, experimentation and the wide-open Web of creative anarchy, PCs permit the spread of spam, viruses and copyright infringements, that call into question the aforementioned notion of the law as (i) made of commands; (ii) enforced through physical sanctions; (iii) within the territory of a sovereign state. Some countries, like China, have built up systems of filters and re-routers, detours and dead-ends, to keep internet users on the state-approved online path. Other states, such as France or South Korea, have endorsed the so-called “three strikes”-doctrine, as a part of the graduated system which ends up with the user internet disconnection after three warnings of allegedly copyright infringements. At the end of the day, we should evaluate governance actors as game designers that deal with the twofold features of generative ICTs, in accordance with the different aims design may have, namely the aim to change people’s behaviour, the aim to decrease the impact of harm-generating conducts; or, even, to prevent such harm-generating conducts from occurring.

Finally, the increasing complexity of today’s ICT-driven societies affects the meaning of traditional legal concepts, such as reasonable foreseeability, liability, responsibility, and “legal causation.” Consider the use of unmanned aerial sys-

tems (UAS), and the current debate on whether and how we should change the EU Regulation 216/2008 and even the 1948 Chicago Convention on International Civil Aviation, so as to allow the (semi-) autonomous flight of the drones. Here, we have to pay attention to the responsibility of UAS operators, manufacturers, maintenance and safety contractors, air traffic controllers or contracting parties, that interact with autonomous or semi-autonomous machines, to avoid ground damage, air-to-air collisions, communication interferences, piracy, environmental concerns, illegal searches in constitutional law, down to violation of the landowner's right and claims of nuisance and trespass in tort law. The increasing capability of machines to be "independent of real time UAS-pilot control input," according to the UK Defence Standards definition of autonomous flight (2011), impacts on the traditional ability of philosophers (and lawyers) to sever the chain of responsibility via notions of causation and "fault." In his 1996 paper *Liability for Distributed Artificial Intelligence*, Curtis Karnow (Karnow 1996) proposed the example of "a hypothetical intelligent programming environment which handles air traffic control" such as "Alef." The advancement of AI technology and, generally speaking, of autonomous artificial agents would ultimately break down "classic cause and effect analysis." Additionally, it seems problematic to determine the types of harm that may supervene with the functioning of an entire processing system such as Alef's. In the phrasing of Karnow:

No judge can isolate the 'legal' causes of injury from the pervasive electronic hum in which they operate, nor separate causes from the digital universe which gives them their mutable shape and shifting sense. The result is a snarled tangle of cause and effect as impossible to sequester as the winds of the air, or the currents of the ocean (*op. cit.*).

The different ways in which this flow of information jeopardizes basic assumptions of the law and politics is stressed throughout this volume. Luciano Floridi calls for "a new philosophy of politics among us" Yiannis Laouris draws the attention to how "future societies will have to design and implement technologies and policies to safeguard the true individual human rights and freedom" Sarah Oates dwells on the nature of the public agora that "should be conceptualized and protected in a way that tips the balance away from the elites and toward the citizens" May Thorseth insists on the possibility of public use of reason in the realm of digital transition, since "a virtual reality may very well be communicative in a Habermasian sense" Charles Ess and Mireille Hildebrandt cast light on modern Western conceptions of liberal democracies and power relations in non-state societies, so as to "illuminate questions of trust and virtual experiences as critical components of 'onlife' in new ways". Whilst these issues are intertwined with the impact of digitalization "on our processes of knowing," Judith Simon presents such issues as "the epistemic responsibilities in entangled digital environments."

In this chapter the aim is to reassess these ideas in connection with the concept of "governance" and, in particular, of "good enough governance" as developed by the United Nations over the past decades, that is, from Kofi Anan's inauguration speech as UN Secretary-General in July 1997, to work by Merilee Grindle (2002, 2005, and 2010; however, I will refer only to Grindle 2005). Consequently, this chapter is presented in four sections: as in Plato's early dialogues, it seems fruitful to start with

some definitions in Sect. 2, namely the different ways in which scholars refer to the idea of “governance.” Then, attention is drawn to three different levels of analysis that concern the notion of “good onlife governance,” that is, the ethical, legal and technological challenges of the information revolution, as examined in Sect. 3. Next, the focus is on the *kosmos*-side of the “onlife experience” via the network approach illustrated in Sect. 4: the aim is to emphasize how the topological properties of today’s ICTs-driven societies and their *kosmos* affect the political planning of lawmakers and, hence, any good onlife governance. Finally, these ideas are deepened with the distinction between game players and game designers in Sect. 5. In addition to the traditional hard and soft law-tools of governance, the governance of complex multi-agent systems that interact “onlife,” does increasingly hinge on the technicalities of design mechanisms.

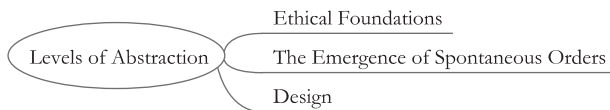
2 Defining Governance

We have already seen how the information revolution jeopardizes key traditional assumptions of legal and political philosophy, such as the state’s monopoly of the legitimate use of force and the law conceived as a set of rules enforced through the menace of physical sanctions. Whilst an increasing number of issues have to be addressed at international and transnational levels, national sovereign states should be considered as one, albeit relevant, agent in the network of competences and institutions summarized by the idea of governance.

In *Good Enough Governance* (2005), Merilee Grindle provides eight meanings of governance: in this section, it suffices to quote two of them. On the one hand, according to the World Bank, the idea of governance concerns “the process and institutions through which decisions are made and authority in a country is exercised” (in Grindle 2005, p. 14). On the other hand, Hyden, Court and Mease refer to “the formation and stewardship of the formal and informal rules that regulate the public realm, the arena in which state as well as economic and societal actors interact to make decisions” (*ibid.*). On this basis, the notion of governance can be furthered as a matter of “good” governance. In the case of the World Bank, focus should be on inclusiveness and accountability established in three key areas, namely, (i) “selection, accountability and replacement of authorities”; (ii) “efficiency of institutions, regulations, resource management”; and, (iii) “respect for institutions, laws and interactions among players in civil society, business, and politics.” In the case of Hyden, Court and Mease, the concept of good governance can be measured along six dimensions, *i.e.*, “participation, fairness, decency, efficiency, accountability, and transparency,” in each of the following arenas: “civil society, political society, government, bureaucracy, economic society, judiciary.”

Drawing on such definitions, Merilee Grindle has objected to the length of the good governance agenda, because “interventions thought to contribute to the ends of economic and political development need to be questioned, prioritized, and made relevant to the conditions of individual countries. They need to be assessed in light

Fig. 2 “Good Enough” in the governance of the onlife experience



of historical evidence, sequence, and timing, and they should be selected carefully in terms of their contributions to particular ends” (Grindle 2005, p. 1). By following this methodological approach to what should be deemed as “good enough,” what are then the issues that ought to be questioned, prioritized and made relevant, so as to pinpoint what is new in the legal and political dimension of our concept reengineering exercise?

In his brilliant *In Search of Jefferson’s Moose* (2009), David Post proposes an analogy between the American West of 1787 and today’s cyberspace:

Cyberspace is not the American West of 1787, of course. But like the American West of 1787 is (or at least it has been) a Jeffersonian kind of place... And like the West of 1787, cyberspace poses some hard questions, and could use some new ideas, about governance, and law, and order, and scale. The engineers have bequeathed to us a remarkable instrument, one that has managed to solve prodigious technical problems associated with communication on a global scale. The problem is the one that Jefferson and his contemporaries faced: How do you build “republican” institutions—institutions that respect equal worth of all individuals and their right to participate in the formation of the rules under which they live—that scale? (Post 2009, pp. 116–117)

The question begets three different levels of analysis. The first viewpoint is ethical and has to do with the foundation of any good onlife governance; the second level is both legal and political, since it concerns the distinction between the emergence of spontaneous orders in the legal field, and human (political) planning; the third perspective is related to the aim to embed legal safeguards into ICTs and other types of technology. From a methodological stance, each level of abstraction can be grasped as an interface made up of a set of features, that is, the observables of the analysis (Floridi 2008). By changing the interface, the analysis of the observables and variables of the three levels of abstraction should strengthen our comprehension of the onlife experience and, more particularly, of today’s governance. In accordance with some principles of information ethics (Floridi 2013), the emergence of spontaneous orders, and matters of design and scale, what is new in the legal and political dimension of our concept reengineering exercise is thus pinpointed through such observables of the analysis, as the right balance between representation and resolution at the first level of abstraction; notions of nodes, diameters of the network, and links, to grasp the second level of abstraction, and so forth. These different levels of analysis, discussed separately in the next section, are illustrated with Fig. 2. The aim is to shed light on what ought to be prioritized, and made relevant, in our concept reengineering exercise as that which is “good enough” in the governance of the onlife experience.

3 Three Levels of Analysis

The first level of analysis concerning any good onlife governance regards the foundations of what Floridi conceives as an “efficient” and “intelligent” multi-agent system, the model of which may represent a goal that could successfully orient our political strategy in terms of transparency and tolerance: “Finding the right balance between representation and resolution, while implementing the agreement to agree on the basis of ethical principles that are informed by universal human rights, is a current major challenge for liberal democracies in which ICTs will increasingly strengthen the representational side.” On the basis of this right balance between representation and resolution, we have thus to assess how the information revolution reshapes models of political legitimacy and democratic processes, much as republican institutions that shall “respect equal worth of all individuals” (Post 2009). Since this is the subject matter of Floridi’s contribution in this volume (see above, pp. xx–xx), let me skip this part of the analysis.

The second level concerns Friedrich Hayek’s classical distinction between *kosmos* and *taxis*, *i.e.*, evolution vs. constructivism, spontaneous orders vs. human (political) planning. Recent empirical evidence confirms that the informational complexity of human interaction is not reducible to *taxis* alone and, moreover, orders spontaneously emerge from the complexity of the environment through specific laws of evolution (Pagallo 2010). Most of the time, today’s research on governance, good governance, and good enough governance focuses on the *taxis*-side of political dynamics, namely, the decisions of institutional, societal, and economical actors, as a set of rules or instructions for the determination of other informational objects and agents in the system. Still, we should reflect on the properties of the onlife multi-agent systems as a complex network that adapts to the environment through learning and evolutionary processes, such as sophisticated signalling and information mechanisms. Complex systems are characterized by a collective behaviour that emerges from large networks of individual components, although no central control or simple rules of operation direct them. Accordingly, legislators, policy makers and, generally speaking, governance actors shall preventively understand the nature of the field in which they aim to intervene or, maybe, interfere (Pagallo 2012a). The point can be illustrated with a metaphor of Lon Fuller: “The law can act as a gardener who prunes an imperfectly growing tree in order to help the tree realize its own capacity for perfection. This can occur only when all concerned genuinely want the tree to grow, and to grow properly. Our task is to make them want this.” Of course, as it occurs with all the metaphors, we should take Fuller’s parallel with a pinch of salt: in the case of the good onlife governance, the “tree” can indeed strike back, as shown by how many attempts to govern the dynamics of complex multi-agent systems on the internet have been unsuccessful because of the response of the *kosmos*. Recall the US *Stop Online Piracy Act* (SOPA) and the *Protect IP Act* (PIPA), and how these bills miserably failed in winter 2011–2012.

The third level of the analysis can be summed up with the distinction between game players and game designers (Floridi 2013; Pagallo 2012b). Although political planning does not exhaust the complexity of human interaction, it does not follow, *pace* Hayek, that *taxis* cannot shape the evolution of *kosmos*. On the contrary, political decisions can determine the rules of the game as well as the very architecture of the system. Consider the ways some Western democracies and authoritarian regimes alike have specified the functions of state action on the internet. As mentioned above in the introduction, the “three strikes”-doctrine has been endorsed by some countries, such as France or South Korea, to enforce copyright laws, whereas systems of filters and re-routers, detours and dead-ends, have been adopted by such countries, as China, to keep individuals on the state-approved online path. Although some of these architectural measures are not necessarily digital, *e.g.*, the installation of speed bumps in roads as a means to reduce the velocity of cars, current advancements of technology have obliged legislators, policy makers, and governance actors to forge more sophisticated ways to think about legal enforcement and, moreover, the information revolution has made such decisions a critical part of the governance of the entire system. This is why, on 19 April 2012, Neelie Kroes properly insisted on the open structure of the internet and its neutrality as key principles of this very governance: “With a truly open, universal platform, we can deliver choice and competition; innovation and opportunity; freedom and democratic accountability” (Kroes 2012, p. 2).

These different levels of analysis, to be sure, affect each other: game designers should take into account the development of spontaneous orders, much as, say, the transparent governance of a complex multi-agent system can ultimately hinge on the technicalities of design mechanisms. By paying attention to the specificity of the political dimension in our concept reengineering exercise, however, let me prevent a twofold misunderstanding. At times, scholars address the challenges of the information revolution to the traditional models of political legitimacy and democratic processes as if the aim were to find the magic bullet. *Vice versa*, others have devoted themselves to debunk these myths, such as a new direct online democracy, a digital communism, and so forth, by simply reversing the paradise of such techno-enthusiasts (Morozov 2011). All in all, we should conceive today’s information revolution in a sober way, that is, as a set of constraints and possibilities that transform or reshape the environment of people’s interaction. On one hand, this profound transformation affects norms, competences, and institutions of today’s governance, much as people’s autonomy and the right of the individuals to have a say in the decisions affecting them. What is at stake here revolves around a new “right balance” between representation and resolution: suffice it to mention the debate on the role that national sovereign states should have in today’s internet governance, *vis-à-vis* such technical organizations as, for example, ICANN. On the other hand, what makes the governance of ICTs-driven societies unique concerns how the properties of today’s *kosmos* may affect political planning and, hence, the design of any good onlife governance, *i.e.*, the second and third levels of abstraction illustrated with Fig. 2 above. Next section deepens this latter viewpoint with some tenets of network theory and, more particularly, in accordance with the topological properties of

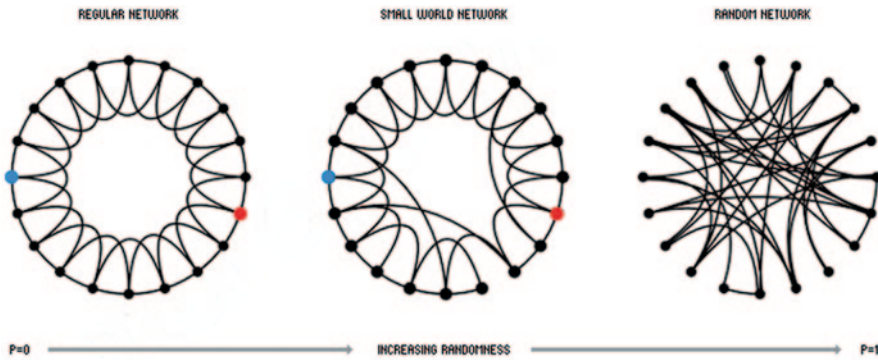


Fig. 3 Three topological models

today’s online *kosmos* and the emergence of spontaneous orders. Then, Sect. 5 brings us back to the *taxis* side of the onlife governance, by examining the ways in which the decisions of game designers can impinge on collective and individual autonomy.

4 The Topology of Onlife Networks

Several spontaneous orders on the internet present the topological features of scale free-networks and “small worlds.” To grasp how the complexity of such topological properties affect any political planning, have a look at Fig. 3 with the key parameters of every network, namely (i) its nodes, (ii) the average distance between nodes or diameter of the network, and (iii) its clustering coefficients. This allows us to single out three models.

The first one is represented by a regular network in which all of the nodes have the same number of links: this network has high clustering coefficients but a long diameter since the degree of separation between nodes is high.

The second model is a random network with opposite features: it presents low clustering coefficients but a very short diameter. The explanation is that random links exponentially reduce the degree of separation between nodes in the network.

The third model is a small world-network: its peculiarity depends on the apparent deviation from the properties of both regular and random networks. Like regular networks, small world-networks present high clustering coefficients, but they also share with random networks a short characteristic path length, *i.e.*, the nodes of the network need few steps in order to reach each other.

As you can see, in light of Fig. 3, in the regular network there are 20 nodes, each of which has 4 links, so that the blue node (the brighter one on the left) would need at least 5 steps to reach the red one (the brighter one on the right). What is striking with a small-world network is how random links exponentially reduce the degree

of separation between nodes: for instance, if 3 nodes are randomly rewired, the degrees of separation decrease from 5 to 3. This means that, in a circle of 6 billion (people) nodes as our world could be represented today, if random links in the network would be about 2 out of 10,000, the degree of separation turns out to be 8. But if they are 3 out of 10,000, then 5!

Since the pioneering work of Stanley Milgram (1967) and, later, of Mark Granovetter (1973), the idea of small world-networks became in few years one of the key words of contemporary scientific research by fostering a large set of empirical studies on the topology of complex systems. Significant effort has been made in order to structure analytical models able to capture the nature of small world-networks. Here, it suffices to mention only two of these. The first small world-model was proposed by Duncan Watts and Steven Strogatz (1998): they suggested to randomly rewire a small fraction of the edges belonging to a low-dimensional regular lattice so as to prove that the degrees of separation in the network would exponentially decrease. Yet, contrary to random networks, the shortening of the diameter proceeded along with high clustering coefficients as in regular networks. These small world-features explain the results of Milgram's and Granovetter's research because short diameters of the network and high clustering coefficients quantify both the low degrees of separation between two citizens picked up randomly in such a complex network like the American society studied by Milgram in the mid 1960s, and the "strength of weak ties" stressed by Granovetter in the early 1970s.

The second analytical model we need to examine was defined by Albert-Lászlo Barabási (2002): he noted that most real world networks, such as the internet, grow by continuous addition of new nodes whereas the likelihood of connecting to a node would depend upon its degree of connectivity. This sort of special attachment in a growing system explains what Watts and Strogatz apparently missed, namely, the power-law distribution of the network in a topological scale-free perspective: small world-networks in the real world are indeed characterized by few nodes with very high values and by most nodes with low connectivity. The presence of hubs or of a small fraction of nodes with a much higher degree than the average offers the key to comprehend why small world-networks can be both highly clustered and scale-free. This occurs when small, tightly interlinked clusters of nodes are connected into larger, less cohesive groups.

Drawing on this research, we can deepen the notion of complexity mentioned in the introduction. Today's onlife *kosmos* can indeed be comprehended in accordance with the nature of the hubs and the degree of their connectivity in a small world network, because the emergence of spontaneous orders, e.g. peer-to-peer (P2P) file-sharing systems on the internet, often goes hand in hand with the hierarchical structure of these networks (Pagallo and Durante 2009; Glorioso et al. 2010). Significantly, in *The Sciences of the Artificial* (new ed. 1996), Herbert Simon insisted on this point, i.e., the notion of "hierarchy" as the clue for grasping the architecture of complexity and, moreover, the idea of "nearly decomposable systems" that reconciles rigid top-down and bottom-up approaches. In the wording of Simon, "the clusters of dense interaction in the chart" of social interaction "will identify a rather well-defined hierarchic structure" (*op. cit.*, p. 186). Furthermore, according

to the “empty world hypothesis,” the term of near decomposability denotes that “most things are only weakly connected with most other things; for a tolerable description of reality only a tiny fraction of all possible interactions needs to be taken into account” (Simon 1996, p. 209). Recall the difference between regular networks, random networks, and small worlds, mentioned above: Simon’s “empty world hypothesis” corresponds to the notion of hubs, since such hubs not only offer the common connections mediating the short path lengths between the nodes of the network, but also elucidate the clusters of dense interaction and complexity in the chart of social relationships.

These topological properties of the network introduce a crucial point on how the structure of the *kosmos* may affect the political planning of the *taxis* and, hence, any “good onlife governance.” Whilst I assume that there is no *kosmos* without *taxis* in the “onlife experience,” governance actors should really know the subject matter which they intend to govern. The point can be illustrated with the words of Paul Ormerod:

In a scale-free network, we know that we need to identify the well-connected individuals and to try by some means to induce them to change their behaviours. In a random network, we know that there is a critical value of the proportion of agents we need to influence in order to encourage or mitigate the spread of a particular mode of behaviour or opinion across the network. This at least gives us an idea of the scale of the effort required, and tells us that money and time which is unlikely to generate the critical mass is money and time wasted. In a small-world context, targeting our efforts is more difficult, but at least we know that it is the long-range connectors, the agents with links across different parts of the network, or who have connections into several relevant networks, who are the most fruitful to target. (Ormerod 2012, p. 275)

Yet, a crucial aspect of the analysis concerns more the evaluation, than the description, of the *kosmos*, which *taxis* aims to discipline. Lawmakers, policy makers and governance actors should not only know whether they are dealing with a random network, a small-world network, a scale-free network, and so forth, since they have to evaluate the kind of information that is distributed according to the topological properties of a regular network, a random network, etc. Consider the following spectrum in the field of social interaction, which empirical evidence has proved to be a small world network: at one end, the “small worlds” of the internet in the early 2000s and their positive effects (Barabási 2002); at the other end, what the COPLINK program illustrated in the mid 2000s, namely that “narcotics networks are small-world with short average path lengths ranging from 4.5–8.5 and have scale-free degree distributions with power law exponents of 0.85–1.3” (Kaza et al. 2005). In between, we find more controversial cases, such as the “small worlds” of some P2P networks as Gnutella (Pagallo and Ruffo 2007). In light of this spectrum, let me reassess the different levels of analysis illustrated above with Fig. 2. From an ethical viewpoint, what should be avoided or minimized is the “impoverishment of the infosphere,” or entropy, whilst “the flourishing of informational entities as well as the whole infosphere ought to be promoted by preserving, cultivating and enriching their properties” (Floridi 2006). From a legal and political stance, what is at stake here concerns the ways in which the new scenarios of the information revolution have suggested national and international lawmakers more sophisticated

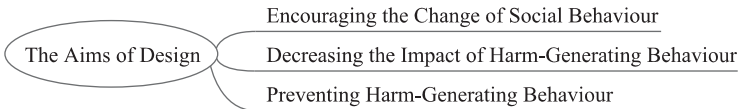


Fig. 4 How game designers may shape the onlife experience

forms of legal enforcement, complementing the traditional hard tools of the law, much as softer forms of legalized governance, such as the standardization of best practices and guidelines, through the mechanisms of design, codes, and IT architectures. Many impasses of today's legal and political systems can indeed be tackled, by embedding normative constraints and constitutional safeguards into ICTs. After the topological properties and ethical challenges of the current *kosmos*, let me examine this *taxis*-side of the onlife governance separately: the next section explores how game designers may shape the onlife experience.

5 The Design of the Onlife Experience

The concept of design can be understood as the act of working out the shape of objects: we actually mould the form of products and processes, together with the structure of spaces and places, so as to comply with regulatory frameworks. Such a shaping is not necessarily digital: as mentioned above in Sect. 3, consider the installation of speed bumps in roads as a means to reduce the velocity of cars (lest drivers opt to destroy their own vehicles). Still, the information revolution has obliged policy makers to forge more sophisticated ways of legal enforcement through the design of ICT interfaces, default settings, self-enforcing technologies, and so forth. According to the phrasing of Norman Potter in his 1968 book on *What is a Designer* (new ed. 2002), a crucial distinction should be stressed between designing spaces (environmental design), objects (product design), or messages (communication design). Moreover, in their work on *The Design with Intent Method* (2010), Lockton, Harrison and Stanton describe 101 ways in which products can influence the behaviour of their users. In light of Fig. 4, it suffices to focus on three different ways in which governance actors may design the onlife experience.

First, design may aim to encourage the change of social behaviour. Think about the free-riding phenomenon on P2P networks, where most peers tend to use these systems to find information and download their favourite files without contributing to the performance of the system. Whilst this selfish behaviour is triggered by many properties of P2P applications, like anonymity and hard traceability of the nodes, designers have proposed ways to tackle the issue through incentives based on trust (*e.g.*, reputation mechanisms), trade (*e.g.*, services in return), or alternatively slowing down the connectivity of the user who does not help the process of file-sharing (Glorioso et al. 2010). For example, two very popular P2P systems, namely μ Torrent and Azureus/Vuze, have inbuilt anti-leech features that cap the

download speed of the users, if their upload speed is too low (note that a low upload speed may in turn hinge on the policy of some ISPs that count both uploads and downloads as monthly data quota). In addition, design mechanisms can induce the change of people's behaviour via friendly interfaces, location-based services, and so forth. These examples are particularly relevant because encouraging individuals to change their behaviour prevents risks of paternalism, when the purpose of design is to encourage such a change of behaviour by widening the range of choices and options. At its best, this latter design policy is illustrated by the open architecture of a web "out of control" (Berners-Lee 1999).

Second, design mechanisms may aim to decrease the impact of harm-generating behaviour rather than changing people's conduct, that is, the goal is to prevent the impoverishment of the agents and of the whole infosphere, rather than directly promoting their flourishing. This further aim of design is well represented by efforts in security measures that can be conceived of as a sort of digital airbag: as it occurs with friendly interfaces, this kind of design mechanism prevents claims of paternalism, because it does not impinge on individual autonomy, no more than traditional airbags affect how people drive. Contrary to design mechanisms that intend to broaden individual choices, however, the design of digital airbags may raise issues of strong moral and legal responsibility, much as conflicts of interests. A typical instance is given by the processing of patient names in hospitals via information systems, where patient names should be kept separated from data on medical treatments or health status. How about users, including doctors, who may find such mechanism too onerous? Furthermore, responsibility for this type of mechanisms is intertwined with the technical meticulousness of the project and its reliability, *e.g.*, security measures for the informative systems of hospitals or, say, an atomic plant. Rather than establishing the overall probability of a serious accident, focus should be here on the weaknesses in the safety system, ranking the accident sequences in connection with the probability of their occurrence, so as to compare different event sequences and to identify critical elements in these sequences. All in all, in Eugene Spafford's phrasing, it would be important that governance actors, *sub specie* game designers, fully understand that "the only truly secure system is one that is powered off, cast in a block of concrete and sealed in a lead-lined room with armed guards—and even then I have my doubts" (in Garfinkel and Spafford 1997).

Third, there is the most critical aim of design, namely to prevent harm generating-behaviour from occurring through the use of self-enforcing technologies, such as DRMs in the field of intellectual property protection, or some versions of automatic privacy by design (*e.g.*, Cavoukian 2010). Of course, serious issues of national security, connectivity and availability of resources, much as child pornography or cyber-terrorism, may suggest endorsing such type of design mechanism, though the latter should be conceived as the exception, or last resort option, for the governance of the onlife experience. Contemplate some of the ethical, legal, and technical reasons that make problematic the aim of design to automatically prevent harmful conduct from occurring. As to the ethical reasons, specific design choices may result in conflicts between values and, vice versa, conflicts between values may impact on the features of design: we have evidence that "some technical

artefacts bear directly and systematically on the realization, or suppression, of particular configurations of social, ethical, and political values” (Flanagan et al. 2008). As to the legal reasons against this type of design policy, the development and use of self-enforcing technologies risk to curtail both collective and individual autonomy severely. Basic tenets of the rule of law would be at risk, since people’s behaviour would unilaterally be determined on the basis of technology, rather than by choices of the relevant political institutions: what is imperilled is “the public understanding of law with its application eliminating a useful interface between the law’s terms and its application” (Zittrain 2007).

Finally, attention should be drawn to the technical difficulties of achieving such total control through design: doubts are cast by “a rich body of scholarship concerning the theory and practice of ‘traditional’ rule-based regulation [that] bears witness to the impossibility of designing regulatory standards in the form of legal rules that will hit their target with perfect accuracy” (Yeung 2007). Indeed, there is the technical difficulty of applying to a machine concepts traditionally employed by lawyers, through the formalization of norms, rights, or duties: after all, legal safeguards often present highly context-dependent notions as, say, security measures, personal data, or data controllers, that raise a number of relevant problems when reducing the informational complexity of a legal system where concepts and relations are subject to evolution (Pagallo 2010). To the best of my knowledge, it is impossible to program software so as to prevent forms of harm generating-behaviour even in such simple cases as defamations: these constraints emphasize critical facets of design that suggest to reverse the burden of proof when the use of allegedly perfect self-enforcing technologies is at stake. In the wording of the US Supreme Court’s decision on the *Communications Decency Act* (“CDA”) from 26 June 1997, “as a matter of constitutional tradition, in the absence of evidence to the contrary, we presume that governmental regulation... is more likely to interfere with the free exchange of ideas than to encourage it.”

6 Conclusions

The purpose of this chapter was to cast light on some of the issues that ought to be questioned, prioritized, and made relevant, so as to stress what is specific to the legal and political dimensions of the onlife governance. Starting with current definitions of governance, good governance, and good enough governance in Sect. 2, the analysis dwelt on the complex ways in which multi-agent systems interact in light of the difference between *kosmos* and *taxis*, on one side, and between game players and game designers, on the other. By taking into account the examples of local customs, international uses, and transnational markets, that is, the traditional forms of spontaneous orders examined by a Nobel laureate (Hayek 1982), what is critical today concerns, on the one hand, the evolutionary processes of multi-agent systems that are ICTs-dependent, ubiquitous, and moreover, cannot be reduced to the *taxis*-side of governance. Going back to the debate on the ethical foundations of

today's cyberspace, *e.g.*, David Post's republican institutions that shall respect the equal worth of all individuals, it is admittedly an open question how such institutions should be built, and even conceived of (Post 2009; Solum 2009; Reed 2012; *etc.*): yet, the paper has shown how often the efficiency and legitimacy of traditional hard and soft-law tools of governance depend on what scholars present as "network effect." Legislators, policy makers and, generally speaking, governance actors shall preventively understand the political, legal and economical relevance of what spontaneously emerges and evolves onlife, namely that which we discussed above in Sect. 4.

On the other hand, what is specific of today's onlife governance revolves around the role of game designers. In addition to the debate on the institutional issues of current governance, and how its traditional hard and soft law-tools should be distributed among political authorities, societal actors, and economic players, such as lobbies and stakeholders, the challenges of the information revolution have induced complementing such tools, *e.g.*, guidelines and best practices, through the mechanisms of design, codes and architectures. This new scenario affects basic pillars of the law and democratic processes, by reshaping the balance between resolution and representation, much as the right of the individuals to have a say in the decisions affecting them. Here, the three levels of analysis discussed above in Sect. 5 are critical. When the aim is to broaden the range of people's choices, so as to encourage the change of their behaviour, such design policy is legally and politically sound: this approach to design prevents threats of paternalism that hinge on the regulatory tools of technology, since it fosters collective and individual autonomy. Likewise, the aim of design to decrease the impact of harm-generating behaviour through the use of digital airbags, such as security measures or user friendly interfaces, respects collective and individual autonomy, because this approach to design does not impinge on people's choices, no more than traditional airbags affect how individuals behave on the highways. Yet, to complement the hard and soft-law tools of governance by design entails its own risks, when the aim is to prevent harm-generating behaviour from occurring.

Although many impasses of today's legal and political systems can properly be addressed by embedding legal safeguards into ICT and other kinds of technology, there are several legal, ethical and technical reasons why the use of allegedly perfect self-enforcing technologies raises serious threats of paternalism and, even, of authoritarianism. Whether DRMs, automatic versions of the principle of privacy by design, three-strikes approaches, China's "Great Firewall," or Western systems of filters in order to control the flow of information on the internet, the result is the modelling of individual conduct. As game designers dealing with the challenges of the information revolution, this paper suggested why governance actors ought to consider the use of self-enforcing technologies as the exception, or a last resort option, to minimize the informational entropy of the system or, vice versa, to promote its flourishing and that of its informational objects. What is at stake here is "complex," because the legal and political challenges of the information revolution often concern the whole infrastructure and environment of people's interaction. Recent statutes, such as HADOPI in France, or DEA in UK, show how new ways of protecting citizens even against themselves do materialize.

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Part VII
The Public Sphere in a Computational Era

The Public(s) Onlife

A Call For Legal Protection by Design

Mireille Hildebrandt

1 *Onlife* After the Computational Turn?

1.1 *Computational Turn*

In my inaugural lecture I have reiterated the notion of a computational turn, referring to the novel layers of software that have nested themselves between us and reality (Hildebrandt 2013). These layers of decisional algorithmic adaptations increasingly co-constitute our lifeworld, determine what we get to see (search engines; behavioural advertising), how we are treated (insurance, employment, education, medical treatment), what we know (the life sciences, the digital humanities, expert systems in a variety of professions) and how we manage our risks (safety, security, aviation, critical infrastructure, smart grids). So far, this computational turn has been applauded, taken for granted or rejected, but little attention has been paid to the far-reaching implications for our perception and cognition, for the re-woven fabric on which our living-together hinges (though there is a first attempt in Ess and Hagengruber 2011, and more elaboration in Berry 2012). The network effects of ubiquitous digitization have been described extensively (Castells 2011; Van Dijk 2006), though many authors present this as a matter of ‘the social’, neglecting the extent to which the disruptions of networked, mobile, global digital technologies are indeed ‘affordances’ of the socio-technical assemblages of ‘the digital’. Reducing these effects to ‘the social’ does not help, because this leaves the constitutive and regulative workings of these technologies under the radar. Moreover, we need to distinguish between digitization per se and computational techniques such

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as machine learning that enable adaptive and proactive computing and thereby present us with an entirely novel—smart—environment.

1.2 *Smart Environments*

I believe that whereas such smart environments have long remained a technological fantasy, they are now with us, around us, even inside us (Hildebrandt and Anrig 2012). They anticipate our future behaviours and adapt their own behaviours to accommodate our inferred preferences—at least insofar as this fits the objectives of whoever is paying for them (commercial enterprise, government). They provide us with a ubiquitous artificial intelligence that uproots the common sense of our Enlightenment heritage that matter is passive and mind active. *Matter is developing into mind*, becoming context-sensitive, capable of learning on the basis of feedback mechanisms, reconfiguring its own programs to improve its performance, developing ‘a mind of its own’, based on second-order beliefs and preferences. This means nothing less than the emergence of environments that have agent-like characteristics: they are viable, engines of abduction, and adaptable (Bourgine and Varela 1992); they are context-sensitive, responsive, and capable of sustaining their identity by reconfiguring the rules that regulate their behaviours (Floridi and Sanders 2004). We note, of course, that so far ‘they’ are not consciously aware of any of this, let alone self-conscious. Also, let’s acknowledge that we are not talking about what Clark (2003) termed ‘skinbags’: neatly demarcated entities that contain their mind within their outer membranes, surface or skin. The intelligence that emerges from the computational layers is engineered to serve specific purposes, while thriving on the added value created by unexpected function creep; it derives from polymorphous, mobile computing systems, not from stand-alone devices such as those fantasised in the context of humanoid robotics.

1.3 *What’s New Here?*

In what sense is this a novel situation? Where lies the continuity with preceding information and communication technologies? In his magnificent *Les technologies de l’intelligence* Pierre Lévy (1990) discussed the transitions from orality to script, printing press and mass media towards digitisation and the internet. Summing up, Lévy suggests that we are in transition from a linear sense of time to segments and points; from accumulation to instant access; from delay and duration to real-time and immediacy; from universalization to contextualisation; from theory to modelling; from interpretation to simulation; from semantics to syntaxis; from truth to effectiveness; from semantics to pragmatics; from stability to change. Interestingly, his focus is on ubiquitous computing and he highlights the impact of the hyperlink, but hardly engages with the computational intelligence described above. Core to the more recent, ambient intelligence, is the fact that human beings are anticipated by complex, invisible computing systems (Stiegler 2013). Their capacity to generate data derivatives (Amoore 2011) and to pre-empt our intentions on the basis

of personalised inferences creates what Catherine Dwyer (2009) has called ‘the inference problem’. The thingness of our artificial environment seems to turn into a kind of subjectivity, acquiring a form of agency. In other work I have suggested that social science has long since recognized the productive nature of the inference problem that nourishes relationships between humans (Hildebrandt 2011a). Notably, sociologists Parsons as well as Luhmann spoke of the so-called double contingency that determines the fundamental uncertainty of human interaction (Vanderastraeten 2007). Since I can never be sure how you will read my words or my actions, I try to infer what you will infer from my behaviours; the same goes for you. We are forever guessing each other’s interpretations. Žizek (1991) has qualified the potentially productive nature of this double and mutual anticipation by suggesting that ‘communication is a successful misunderstanding’. What is new here is that the computational layer that mediates our access to knowledge and information is anticipating us, creating a single contingency: whereas it has access to Big Data to make its inferences (Mayer-Schonberger and Cukier 2013), we have no such access and no way of guessing how we are being ‘read’ by our novel smart environments.

1.4 Which Are the Challenges?

If going Onlife refers to immersing ourselves in the novel environments that depend on and nourish the computational layers discussed above, then going Onlife will require new skills, different capacities and other capabilities. To prevent us from becoming merely the cognitive resource for these environments we must figure out how they are anticipating us. We must develop ways to extend the singly contingency to a renewed double contingency. How to read in what ways we are being read? How to guess the manner in which we are being categorized, foreseen and pre-empted? How to keep surprising our environments, how to move from their proaction to our interaction? In other work I have suggested that we need to probe at least two tracks: first, to develop human machine interfaces that give us unobtrusive intuitive access to how we are being profiled, and, second, a new hermeneutics that allows us to trace at the technical level how the underlying algorithms can be ‘read’ and contested (Hildebrandt 2011b, 2012). For now, the point I would like to make is that the implications of going Onlife cannot be reduced to privacy and data protection. I hope that the previous analysis demonstrates a far more extensive impact that cannot be understood solely in terms of the wish to hide one’s personal data. It requires more than that; indeed it challenges us to engage with our environments as if we are taking ‘the intentional stance’ with them (Dennett 2009).

2 Publics and their Problems in Smart Environments

2.1 Smart Environments and the Public Sphere

Above I have tried to flesh out in what sense smart environments present us with a novel situation. My conclusion was that the computational layers that mediate our

perception and cognition of the world are generating *an environment that simulates agency*. Whereas the International Telecommunications Union spoke of the Internet of Things as ‘the offline world going online’ (ITU 2005), in some sense the plethora of autonomic decision systems are turning our inanimate environment ‘*Onlife*’. In this section I will investigate what this means for the public sphere, or even for the traditional private/public divide in itself. I will engage with the notion of the public sphere to inquire whether and how smart environments generate a kind of ‘natality’ here (Arendt 1958): a novelty, a beginning, an empty space to experiment—with as yet unknown affordances.

2.2 *Public Private Social: Performance, Exposure, Opacity*

Much has been written about the shrinking of the private, the blurring of the public/private divide and, for instance, the loss of privacy in public (notably Nissenbaum 1997). Such shrinking, loss and blurring have been attributed to either the lure of self-publication in web 2.0 (Cohen 2012), or to the secretive *trading with* and *spying on* our behavioural data in the course of pervasive computing (Cohen 2012; Hildebrandt 2012).

Maybe we should return to Arendt (1958), when she spoke of the private as a sphere of necessity (the household), the public as the space for freedom (political action) and ‘the social’ as the emergence of mass society (bureaucracy, individual self-interest and conformity). Her understanding of ‘the social’ or what she called ‘society’ is not altogether positive, to put it mildly. Is the rise of web 2.0 antithetical to ‘the social’, because it concerns communication of one-2-one, one-2-many as well as many-2-many, rather than many-2-one? Or does the processing of Big Data present us with ‘the social’ come true, where ‘the social’ is constituted by machine-readable bits and pieces that allow for the ultimate version of what Heidegger (1996) called ‘*das rechnende Denken*’ (calculative thinking)? I am not sure, and I believe the jury is still out. The answer will depend on empirical evidence of how ‘the social’ continues to evolve in smart environments.

I do think that Arendt’s understanding of the private and the public might save us from dichotomous thinking, as well as from the glorification of ‘private life’ as a sphere of uncontroversial freedom. Simultaneously, we must come to terms with the fact that her glorification of the public sphere has little connection with present day politics, which rather fall within the scope of her depiction of ‘the social’. We should also note that her glorification of politics as a ‘theatre of debate’ (other than the realm of household economics) is rooted in an appreciation of privacy as ‘some darker ground which must remain hidden if it is not to lose its depth in a very real, non-subjective sense’ (Arendt 1958, S. 71). To speak and act ‘in public’ one must leave the security of one’s home. But to distinguish oneself and to take the risk of being refuted, requires courage, daring *and a place to hide*. To recuperate from the tyranny of public opinion (Mill 1859) we need a measure of *opacity* to re-constitute the self, far from the social pressures that could turn us into obedient self-disciplined subjects (Hutton et al. 1988). In fact I would agree with Butler (2005), where

she underscores the constitutive opacity of the self, that invites reiterant attempts to invent a coherent narrative of who we are, but at the same time escapes all narrative since the emergence of our self is hidden in our own prehistory (the infancy before we acquired language).

My question concerning the public in smart environments would thus be: how to design our ONLIFE in a way that affords a sustainable public performance,¹ an empowering opacity of the self and a range of exposures that incorporates the need for self-expression, identity performance as well as the generosity of forgetfulness, erasure and the chance to reinvent oneself?

2.3 *Public Performance in the ONLIFE Everywhere*

Maybe ONLIFE has two dimensions, as suggested above. The first concerns self-publication or reputation management. It is a type of social networking (Facebook, Twitter, Foursquare, Instagram, YouTube, Training Intelligence Programs, Enhanced Reality), a pervasive ambience of sharing self-images, brief text, photo's, video's, location, 'likes', 'dislikes', sport's performance, health status or professional reputation. The second dimension of ONLIFE concerns the ubiquitous measurement, calculation and manipulation of the data that leak from everyday behaviours, and the way these behavioural data are used to predict, pre-empt and thus manage future states of mind, choices and decisions, for instance in the case of behavioural advertising, location based services, fraud detection, actuarial calculations, remote healthcare, neuromarketing or criminal profiling.² Both seem to draw individual 'users' into Arendt's 'the social'. 'Users' have become what she calls 'a society', an assembly of individuals that manage their reputation, while also being managed as a resource for government and the industry. In fact, the computational infrastructure employs behavioural traces as its cognitive resource.

The questions generated by all this focus, on what affordances the ONLIFE should develop to enable a shared, agonistically organised public space that allows a plurality of 'users' to develop a *voice*, to partake in democratic decision-making and to hold each other to account, while at the same time providing the 'users' with effective means to withdraw, to unplug, to delete and start over. This raises three additional inquiries. First, the question of how to protect 'users' against invisible manipulation (because of the hidden complexity), unfair exclusion (because of the lack of transparency that disables contestation), and undesirable exposure (because of the ubiquitous pressure to 'post' an update of one's where/what/who-about)? Second, the question of how to empower Onlife inhabitants in a

¹ I use capital 'ONLIFE' when speaking of the 'world' we inhabit (Onlife as a noun) and lower case 'Onlife' when using the term to describe attributes of our being (Onlife as an adverb or adjective).

² With the World Economic Forum ("Personal Data: The Emergence of a New Asset Class" 2011) we can distinguish between volunteered, observed and inferred data. Data-driven environments indeed thrive on the combination of provided, leaked and derived data. Consumers and citizens, however, are seldom aware of the leaked and derived data.

way that enables them to challenge the design of their world? Is this about renegotiating the social contract? Or is it about construction work; how to build an Onlife world that is not a global village, nor a walled garden, but an extended *urbanity*? Third, the question of how this connects to the dimension of agency that is emerging within the Onlife experience; how can inhabitants or visitors of the ONLIFE learn to guess how they are being anticipated?

2.4 *A Plurality of Publics, a Choice of Exposure, a Place to Hide*

In 1927 Dewey wrote *The public and its problems*. The book is an extended reply to Lippman's (1997) analysis of democratic government in the age of mass media, high tech instrumentation and societal complexity. I find his analysis and the normative position he takes on democratic practice highly relevant for our current enterprise. As Marres (2005) has demonstrated Dewey agrees with Lippman's diagnosis, but not with his cure. Whereas Lippman believes the only solution is technocratic government, Dewey argues for a new understanding of democracy. For a start, he reminds us that representative democracy (voting) is a matter of *delegation*, relieving people from the burden of governing themselves. Second, he believes that once people discover that their delegates are not doing a good job with regard to a specific issue, they will seek out their fellows and form a public around this issue. Interestingly, the formation of publics and issues is a matter of co-constitution: no issue, no public [and vice versa]. This leads Dewey to understand democracy as the process of simultaneously constructing publics and issues, whereby people regain a measure of control over issues their delegates forsake. Publics and issues are thus performed, constructed, fabricated—not given. Their articulation and their assemblage require hard work. There is not one—given—Public, but a multiplicity of publics that changes shape in relation to the issues they frame. And also, in relation to each other.

Dewey's publics differ from Arendt's public sphere. His publics are more empirical and contingent and they have less continuity. In fact a successful public will resolve its issue and cease to exist as such. However, both Dewey and Arendt's publics require individuals who take the risk of raising their voice, contesting common sense and—more importantly—initiating the construction of a new common sense around what they present as an issue. Dewey seems less interested in opposing 'the social' with 'the public'. His definition of democracy demonstrates a fundamental trust in the wisdom of crowds (to be distinguished from a naïve wisdom of 'the Crowd'). Like Mouffe (2000) in political theory and Rip (2003) in constructive Technology Assessment, Dewey trusts the outcome of agonistic decision-making processes. His publics are always under construction—they thrive on, contest and challenge whatever pretends to represent 'the social'. They ground a natality in the midst of 'the social', a possibility for radical reinvention of what is taken for granted.

What interests me here is how we—a public constituted around the issue of ONLIFE—can contribute to the design, the engineering, the construction of an

ONLIFE that affords the formation and un-formation of publics, while protecting and cherishing the opacities of the individuals that *make* these publics. In fact I believe that the 2012 draft Regulation of Data Protection holds several gems that may actually provide stepping-stones to such an ONLIFE. In the third part of this contribution I venture into the radical choices it presents and the bridges it builds between legislation, architecture, social norms and market forces (Lessig 2006).

3 Legal Protection by Design: A Novel Social Contract?

3.1 *The Nature of the Social Contract*

Having explained, in the first section, the challenges of an environment that comes Onlife due to a ubiquitous and pervasive layer of machine learning, I have put forward, in the second section, the question of what this means for the public, the social and the private. My conclusion was that we need to construct an infrastructure that allows for a plurality of publics, a choice of exposure and places to hide. Such an infrastructure cannot be taken for granted, it will not appear of itself, nor will it grow organically or ‘naturally’ from the computational layers we are currently putting in place.

The social contract that combined the idea of limited government with—ultimately—representative, deliberative and participative self-government was the result of a historic bargain (Nonet and Selznick 1978). This bargain sealed the autonomy of the law in relation to politics on the condition of non-interference; the independence of the courts thus combined with the monopoly of the legislator to enact the law. We can summarize this as the legislator writing and enacting the law, while the court speaks and interprets the law. Let’s invoke Montesquieu’s often misunderstood maxim: *iudex—non rex—lex loqui*. Not the king but the judge speaks the law (Schönfeld 2008). This was an attack on the medieval maxim that attributed all powers to the king: *rex lex loqui*. The division of tasks that follows from the historic bargain between enacting and speaking the law was based on the socio-technical infrastructure of the printing press; the checks and balances of the Rule of Law depend on the sequential processing of written codes that can be debated, interpreted and contested by those under their rule. The fact that the courts have the final word in case of a conflict guarantees a measure of due process, which guarantees that fundamental rights are an effective part of the social contract. This is not to say that the printing press ‘caused’ the Rule of Law, but to suggest that it created a socio-technical infrastructure conducive to a specific division of tasks between the differentiated powers of the state. This division has specific temporal dimensions: the court *speaks* after the legislator *enacts*; courts are bound by the law enacted by the legislator, while in turn the legislator is bound by the interpretation of the courts—the circle is virtuous; it constitutes countervailing powers and creates room for both enforcement and contestation. All this is part of modernity. It depends on the internal division of sovereignty. Ultimately it depends on the institutionalisation

of the monopoly of violence which is at the core of the operations of sovereignty; effective protection of fundamental rights is only possible if the state can enforce them even where enforcement is required against the state itself.

3.2 *Protecting Modernity's Assets: Reconstructing the Social Contract*

In his *Die Aufklärung in the Age of Philosophical Engineering* Stiegler (2013) accepts the challenge introduced by Tim Berners-Lee, who argued that 'we are not analysing a world, we are building it. We are not experimental philosophers; we are philosophical engineers' (Halpin 2008). Berners-Lee was not merely describing the activities of the architects of the World Wide Web he invented. He was calling them to account for the impact of their engineering on the constitution of mind and society. He was inviting them to build a new *res publica*. Stiegler is more careful. He suggests that digital technology is a *pharmakon*: 'it can lead either to the destruction of the mind, or to its rebirth (ib.).' Referring to Wolf (2008) he notes that the transition from the reading mind to the digitally extended mind entails substantive changes to the composition and behaviour of our brains. Though these changes may be cause for celebration, they also threaten the constitution of the self. In the course of his text Stiegler reiterates the crucial question of what we need to preserve as a valuable heritage of the era of the 'reading brain' (Wolf 2008). I want to connect this with the need to reconstruct the social contract, recognizing its modern roots and its contingency on the ICT infrastructure of the printing press. A new social contract would have to align with the novel technological landscape, co-opting current ICTs to incorporate checks & balances. In that sense we will need a *hybrid* social contract that testifies to the agency-characteristics of smart environments.³

Though we might wish to declare 'Game over for modernity', this may require us to give up on the social contract that protects against immoderate government. Let us remind ourselves that the end of modernity would not necessarily be the end of totalitarian governance. The hidden complexity of computational layers in fact affords refined and invisible manipulations that may be closer to the totalitarian nightmares of Kafka's *Trial* (Solove 2004) and *Forster Machine* (Forster 2009) than to the dictatorial schemes of Big Brother watching you. Stiegler (2013) notes that

the spread of traceability seems to be used primarily to increase the heteronomy of individuals through behaviour-profiling rather than their autonomy.

The 'old-school' social contract will not necessarily survive when cut lose from the ICT infrastructure of the printing press. The idea of the social as a distinctive sphere is in fact typical for modernity's reliance on information and communication technologies that sustain a further distantiating and differentiation of societal

³ The 'old'—modern—social contract was itself a hybrid affair, due to its contingency upon the technologies of the printing press. In using the term 'hybrid' I highlight the awareness that a new hybridity is necessary, tuned to the new ICT infrastructure.

spheres. Oral societies do not have written constitutions capable of keeping their economic and military leaders in check; they require a continuous calibration that entails a persistent threat of violence to keep the vicious circle of private revenge at bay (Hoebel 1971). Societies of the manuscript (the handwritten script) have no means to contest written laws for the majority that does not read or write, they thrive on the monopoly of the class of scribes that buffers between ruler and subjects, thus also protecting its own monopoly (Glenn 2007). Only the printing press provides the specific affordances conducive to the agonistic framework of representative, deliberative and participative democracies under the Rule of Law (Hildebrandt and Gutwirth 2007). To preserve the preconditions of constitutional democracy we need to acknowledge modernity's dependence on sequential thinking (Wolf's era of the reading brain) and its temporal structure that favours reflection over reflexes (Wolf's era of the reading brain). This entails an attempt to engage with the benefits of modernity. Though hierarchical and linear models of social life may have lost territory, we may have to reconstruct and reengineer them insofar as they protect us from chaos and contingent power games. Of course this entails keeping hierarchies in bounds in function of the purpose they should serve.

A hierarchy that organizes countervailing powers may save us from the totalitarian rule of transnational computational decision-systems. Nevertheless, we should acknowledge that the dreams of early cyberspace utopists have not come through; the nation state has not lost its bearing and territorial jurisdiction has not become meaningless (Goldsmith and Wu 2008). This requires vigilance in the face of potential attempts to turn cyberspace into a set of Walled Gardens that might reinforce not merely totalitarianism but also tyranny (Mueller 2010). We must investigate how the novel affordances of cyberspace can be engineered in a way that sets us free as well as constraining those in charge, while fostering a fair distribution of capabilities (Cohen 2012). This urges us to take into account that whereas cyberspace may change the game for modernity's incentive structure, it still nourishes on the system of legal-political checks and balances that was generated by modernity's socio-technical infrastructure.

3.3 Technology Neutrality and Legal Protection by Design

One way of dealing with the implications of cyberspace as a game changer is to integrate legal protection into its socio-technical backbone: its hardware, software and the numerous protocols and standards that enable and constrain its affordances. I have coined this 'legal protection by design', connecting the concept to research communities working on value-sensitive design (Flanagan et al. 2007), constructive technology assessment (Rip et al. 1995), upstream engagement with scientific research (Wynne 1995), privacy impact assessment (Wright and de Hert 2012) and privacy by design and default (Cavoukian 2009; Langheinrich 2001).

Legal protection by design is not about technical enforcement of legal compliance; legal problems cannot be solved by technical solutions. The concept of legal

protection by design refers to novel articulations of fundamental legal rights into ICT infrastructures other than the printing press. Both lawyers and policy makers tend to display the Pavlov reflex of *writing* and enacting new laws when legal problems occur, whereas cyberspace easily turns written law into a paper dragon. Modern law is articulated by means of the technology of the printing press and in cyberspace its monopoly seems hard to enforce. Moreover, public administration has developed techniques to automatically enforce written administrative rules by translating them into automated decision systems. Social security, taxation and numerous permits are now granted or imposed on the basis of such decisions (Citron 2007). Legal protection by design should, however, not be confused with such techno-regulation or technological enforcement of legal compliance. Law is not administration, politics or policy. Legal protection by design instead implies that written legal rules and their underlying unwritten legal principles develop a new type of technology-neutrality. Other than some authors suggest, technology neutrality requires a keen eye on the normative implications of technological developments (Reed 2007; Hildebrandt 2008; Hildebrandt and Tielemans 2013). Wherever a technology changes the substance or the effectiveness of a right, its articulation must be reconsidered to take into account how we wish to reconceptualise and/or reframe the right within the network of related rights and principles. The socio-technical infrastructure of cyberspace often affects the network and the context of sets of rights; for instance, rights to compensation based on tort or breach of contract, as well as rights to privacy, due process and non-discrimination. Technology neutrality therefor requires a lively debate amongst lawyers, but should also generate a similar debate amongst the architects of cyberspace on how to reinvent, to reengineer and to redesign democracy and the Rule of Law in the Onlife environment.

3.4 The Proposed Data Protection Regulation

Let's now be practical. Though some inhabitants of the ONLIFE may claim that data protection is boring and concerns an outdated attempt to revive 'old-school' privacy, I would argue that the legal framework of Data Protection is particularly well tuned to the data-driven environment of cyberspace. Whereas the value of privacy may indeed have been an affordance of the era of the printing press (Stalder 2002), we should not sit back to sing its requiem, instead, we need to assess how to re-invent privacy as a dimension of the Onlife habitat. The Fair Information Principles that inform the legal framework of data protection seem particularly apt to cope with the flux of de- and re-contextualization that drives cyberspatial innovation (Kallinikos 2006). So far, however, these principles were articulated as paper dragons, trailing an irritating bureaucracy while at the same time enforcement seemed an illusion due to the lack of penal competence, budget and personnel on the side of data protection supervisors. Compliance has long been a matter of (minor) costs, to be taken into account after new business models were set in place.

The proposed Regulation could be a game changer. It establishes a new incentive structure and is based on a salient understanding of law's need for effective

[not theoretical] technology neutrality. The Regulation presents the combined force of a mandatory data protection impact assessment, data protection by default (data minimisation at the level of applications), data portability (enabling an effective right to withdraw consent without losing the value of self-generated profiles), the right to forget (requiring effective mechanisms to achieve a reasonable measure of erasure of one's personal data if no legal ground applies for their processing), rights against measures based on profiling (a right to object to being subjected to automated decisions and transparency rights as to the existence of such measures and their envisaged effects) and finally data protection by design (which imposes the duty of adequate mechanisms for compliance on commercial and governmental data controllers). All this would have no effect if the proposal had not ensured efficient mechanisms to incentivize the industry to actually develop data protection by design: the liability regime is inspired by competition law (fines of maximum 2% of global turnover) while the burden of proof per default rests with the data controllers. If the proposed Regulation survives the legislative process, it may finally create the level playing field that challenges companies and governments to develop intuitive and auditable transparency tools. ONLIFE inhabitants will then have the chance to play around with the system, exploring and inventing their identities in the interstices of the hybrid social contexts that shape their capabilities. This should empower them—us—to establish a new *hybrid* social contract that enables a plurality of publics, a choice of exposure and places to hide. Writing did not erase speech, but it changed the nature of speech (Ong 1982); computational layers will not erase writing, but it will change the nature of the reading mind. This may be a good thing, but that will depend on how we invent the infrastructure that will invent us.

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Rethinking the Human Condition in a Hyperconnected Era: Why Freedom is Not About Sovereignty But About Beginnings

Nicole Dewandre

1 The Digital Transition as a Reality-Check for Plato's Utopia Failure

Mary Midgley sees philosophy as plumbing, something that nobody notices until it goes wrong: *'Then suddenly we become aware of some bad smells, and we have to take up the floorboards and look at the concepts of even the most ordinary piece of thinking. The great philosophers ... noticed how badly things were going wrong, and made suggestions about how they could be dealt with.'* (Midgley 2001).

The bad smells, as I perceive them, concern the proliferation of truisms (including about progress, change and innovation), wrong alternatives (“either/or” framing when the “both/and” would be much more efficient), and fears and delusion when it comes to thinking and speaking about politics and the public space. It would be wrong to say that we are in totalitarian times: fascism and communism have been defeated and democracy is alive, at least in the EU and other parts of the world. However, I feel that we are unconsciously undermining essential elements of the human condition, as set out by Hannah Arendt in her seminal book *The human condition* (Arendt 1959): the antidotes against the risk of totalitarianism are thereby weakened to a dangerous extent so that it would not take much more than a spark for the public space to collapse, and this even under the cover of the best governance intentions.

The digital transition is an opportunity to “fix the pipes”, as put by Mary Midgley: it brings about a reality by which some key assumptions underlying our worldview, since Plato, lose ground insofar as they simply stop being efficient. The digital transition projects us into a world where nature is pervasively intertwined with sensors, information devices and machines; we thus increasingly experience a reactive and talkative nature, an animated nature, where it becomes more and more difficult

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to distinguish between what is “given”¹ and what is fabricated. Furthermore, the digital transition creates the worldly conditions for the actual dissolution of the objectivity standpoint: indeed, we “touch” the fact that the abundance of information does not give access to an omniscient/omnipotent posture, but rather that accumulation of knowledge pushes ever further and redefines the remit of what is to be known. Like the sea recovering from the wave behind a boat, reality is thick and dense and recomposes itself, undermining any possibility to acquire or sustain a posture of omniscience and omnipotence.

It is paradoxical to realise that it is exactly when, and probably because, we can envisage what a total and ubiquitous knowledge would mean, that the omniscience/omnipotence utopia can appear as a useless and deceptive fiction. By bringing us to the point where the omniscience/omnipotence utopia can indeed be seen as a chimera, the digital transition, in a paradoxical gesture, calls for re-endorsing the fact that human action² is precisely characterized by its irreversibility and its unpredictability, and this is not necessarily for the worse³. Arendt writes in the late fifties: *“Exasperation with the threefold frustration of action—the unpredictability of its outcome, the irreversibility of the process, and the anonymity of its authors— is almost as old as recorded history. It has always been a great temptation, for men of action no less than for men of thought, to find a substitute for action in the hope that the realm of human affairs may escape the haphazardness and moral irresponsibility inherent in a plurality of agents. The remarkable monotony of the proposed solutions throughout our recorded history testifies to the elemental simplicity of the matter. Generally speaking, they always amount to seeking shelter from action’s calamities in an activity where one man, isolated from all others, remains master of his doings from beginning to end [...] Plato’s solution of the philosopher-king, whose ‘wisdom’ solves the perplexities of action as though they were problems of*

¹ In passing, one may challenge this common way to denote what is not fabricated! What is not fabricated is deemed to be ...given. The question arising immediately is then: why necessarily given by someone? Why this compulsion that is unveiled by this vocabulary to see a “Big Other”, behind everything that is?

² The word “action” is to be understood as defined by Arendt in the Human Condition. Arendt proposes to describe the *vita activa* by distinguishing three activities: labor, work and action. “Labor is the activity which corresponds to the biological process of the human body, whose spontaneous growth, metabolism and eventual decay are bound to the vital necessities produced and fed into the life process by labor. The human condition of labor is life itself [...]. Work is the activity which corresponds to the unnaturalness of human existence, which is not embedded in, and whose mortality is not compensated by, the species’ ever-recurring life cycle. Work provides an “artificial” world of things, distinctly different from all natural surroundings [...]. The human condition of work is worldliness. Action, the only activity that goes on directly between men without the intermediary of things or matter, corresponds to the human condition of plurality, to the fact that men, not Man, live on the earth and inhabit the world. While all aspects of the human condition are somehow related to politics, this plurality is specifically the condition, not only the *conditio sine qua non*, but the *conditio per quam*—of all political life.” HC, pp. 9–10 (apart from the italics in the last sentence, which are from Arendt, the highlights earlier in the quote have been made by the author of this article in view of highlighting the distinctions between labor, work and action). HC, p. 9. More on this tripartition later.

³ More details about the shifts in the digital transition in the *Onlife Background Note*, Chap. 11.

cognition, is only one –and by no means the less tyrannical- variety of one-man rule” (Arendt 1959, pp. 197–199).

Today, the regular call on the need for leadership and political will attest that not less than before, policy-making is pervaded by the quest of “*seeking shelter from action’s calamities in an activity where one man, isolated from all others, remains master of his doings from beginning to end...*” (Arendt 1959, p. 197) The perception that ideal freedom is best actualised in sovereignty, either at collective or individual levels, is the expression of the omnipotence component of the omniscience-omnipotence utopia, while the omniscience side of it is expressed by “*the Platonic wish to substitute making for acting in order to bestow upon the realm of human affairs the solidity inherent in work and fabrication*” (Arendt 1959, p. 202).

In my view, as I hope to make clear later in this contribution, policy-making continues to rely too much on the omniscience/omnipotence utopia. Do we not regularly frame problems in terms of “lack of knowledge”, as if perfect knowledge would allow perfect action? This argument, at the core of the rationale for funding research, reaches out beyond that specific purpose and pervades imaginaries. On the other hand, isn’t the precautionary principle based on the idea that it is somehow possible to foresee and avoid harmful consequences, as if making decisions was about making a choice between different courses of action, as we make a choice in a menu when ordering a meal in a restaurant?

Knowing, thinking, doing and acting can only be done from within (“building the raft while swimming”⁴) and not from an external manipulative perspective. Immanence is becoming commonsensical and is to be endorsed in political terms, without this meaning nihilism or despair. This calls for taking some distance from dramatisation, as a trick, and for recovering a meaningful approach to the present, based on a responsible and modest approach to the challenges of our times. Policy-making should reclaim the present and take responsibility for the choices we make in view of generating “*islands of predictability*” (Arendt 1959, p. 220) and ensure that “*meaning has a place in this world*” (Arendt 1959, p. 212), while holding in contempt the fact that “*real stories, in distinction from those we invent, have no author*” (Arendt 1959, p. 165).

Arendt, with her notions of natality⁵ and plurality⁶, offers a sound basis for balancing the omniscience/omnipotence utopia and for making use of what I will call an Arendtian axiomatic reset in policy framing. Reclaiming natality and plurality allows aligning freedom with plurality, instead of seeing plurality as a constraint to freedom.

⁴ This is my take from this sentence brought about by Luciano Floridi and which became the motto of the Onlife initiative. See the *Onlife Manifesto*, Chap. 2.

⁵ Natality is not to be understood as “birth rate”. It is a technical term in Arendt’s thought expressing the fact that the human condition is characterized by the fact of birth at least as much as by the fact of death. For Arendt, the sustainability of the world is ensured by the fact men and women constantly come to the world by birth and freedom is intimately linked to the capacity to begin.

⁶ For the technical meaning of plurality, see later in this chapter, under 3.2.: Embracing Plurality.

After having addressed the influence of the omniscience/omnipotence prejudice over policy-making, and after having presented how the notions of plurality and natality allow overcoming such prejudice, with the Arendtian axiomatic reset, I shall propose an actualisation of the distinction between the private and public and between agents, nature and artefacts. Building on these new distinctions, I shall propose to consider policy-making, not only in terms of seeking control over the future, but also in being responsive to new meanings and providing the tools to allow agents to orient themselves in the world as it evolves and live a decent life.

2 Omniscience/Omnipotence: Modern Utopia, Human Condition's Dystopia?

2.1 *The Centrality of Control in Knowledge and Action*

In scientific terms, humans are treated as mere scientific objects, i.e., they are elucidated with a view to predict and/or to manipulate them⁷. As pointed out by Arendt, the scientific discourse is indexed on necessity: “*what science and the quest of knowledge are after is irrefutable truth, that is, propositions human beings are not free to reject—they are compelling*” (Arendt 1978, p. 59). In scientific terms, contingency is just another name for “epistemic failure”, a not-yet-known. By denoting contingency with the term uncertainty, i.e., as a negative, certainty is made the norm or the ideal. And scientific knowledge is paired with certainty of facts, even after several decades of quantum mechanics, which rather teaches us that uncertainty and indeterminacy are intrinsic to scientific knowledge as well. This scientific register positions humans as an object of enquiry, a “material”, inherently heteronomous i.e., as fully determined by external materials, forces and processes.

When considered in ethical terms, as Arendt put it ironically, “attempts to define human nature almost invariably end with some construction of a deity...” (Arendt 1959, p. 12). Furthermore, she reckons that freedom has wrongly been identified with sovereignty in political and philosophical thought: “*If it were true that sovereignty and freedom are the same, then indeed no man could be free, because sovereignty, the ideal of uncompromising self-sufficiency and mastership, is contradictory to the very condition of plurality. No man can be sovereign because not one man, but men, inhabit the earth—and not, as the tradition since Plato holds, because of man's limited strength, which makes him depend upon the help of others*” (Arendt 1959, p. 210). Understanding freedom as sovereignty has a huge price, the price of reality: “*sovereignty is possible only in imagination, paid for by the price of reality*” (Arendt 1959, p. 211). Ethical/philosophical narratives of what it is to be human contend with the need to escape from, or at least to balance with,

⁷ In passing, no wonder machine will end-up being like humans, since we have patiently paved the way for that by thinking of humans as machines: “Thought itself, when it became ‘reckoning with consequences’, became a function of the brain, with the result that electronic instruments are found to fulfil these functions much better than we ever could.”—HC, p. 294.

a set of “things to-be-avoided”: the scientifically-induced heteronomy as set out above with the second categorical imperative of Kant⁸, and the Hobbesian “state of nature” and “war of all against all”. “Humanity” in ethical terms is defined as a common opposite to these stance-to-be-avoided: human-as-a-machine, human-as-a-self-defeated-violent-and-careless-individual. This violent and careless aspect is by the way strangely referred to our animality, as if being human was defined as being different from animals.

A common feature of these scientific and ethical/philosophical approaches of what it is to be human is “control”: when in scientific terms, control by others (including by myself-subject on myself-object); when in ethical terms, self-control (including with the help of God-as-a-reference) or control on the future course of events (freedom-as-sovereignty). But control, when decontextualized and pushed beyond its relevant remit, has more to do with destruction than with anything else, while action is precisely characterised by its unpredictability, hence the inherent impossibility to control its consequences: “*Whereas men have always been capable of destroying whatever was the product of human hands and have become capable today even of the potential destruction of what man did not make –the earth and earthly nature- men never have been and never will be able to undo or even to control reliably any of the processes they start through action*” (Arendt 1959, pp. 208–209). Hence, seeking control beyond what can reasonably be predicted has also a high price, the price of plurality and freedom!

2.2 Policy-Making or the Victory of the Animal Laborans?

In “*the Vita activa and the Modern Age*” section of *The Human Condition* (Arendt 1959), Arendt explains how the invention of the telescope changed the relationship between truth and appearance. “*Truth was no longer supposed to appear...to the mental eye of a beholder*” (Arendt 1959, p. 263). Indeed, as the telescope has demonstrated that we are fooled by our senses, “*nothing could be less trustworthy for acquiring knowledge and approaching truth than passive observation or mere contemplation. In order to be certain, one had to make sure, and in order to know, one had to do*” (Arendt 1959, p. 263). The telescope has undermined deeply and for centuries our epistemological confidence in what we perceive without instruments, either by our senses or by mere thinking and contemplation. As a result, “*in modern philosophy and thought, doubt occupies much the same central position as that occupied for all the centuries before by the Greek thaumazein, the wonder at everything that is as it is*” (Arendt 1959, p. 249). This has had a great effectiveness in the relationship with nature and the universe. Without the Cartesian “*de omnibus dubitandum est*” (“everything should be doubted”), we would not have taken the same technological path nor landed on the moon. The Cartesian doubt has shaped the relationship of men to nature in terms of questions to be answered through

⁸ “Act in such a way that you treat humanity, whether in your own person or in the person of any other, never merely as a means to an end, but always at the same time as an end.”

experimental settings, and this has opened an era where, on the one hand, technological artefacts have been invented and widely spread, and where, on the other hand, the conscience of the finiteness and fragility of the earth and the environment surrounding us has arisen. The relationship between men and nature is made of triumph and pride, on the one hand, for all the technological artefacts, and fear and guilt, on the other hand, for the consequences of having “disturbed” the global ecosystem to the point that we are now feeling responsibility for it⁹. It is against this general background that the development, diffusion and uptake of information and communication technologies take place. If there is no doubt that the Cartesian doubt has played a decisive role in this course of action, the disappearance of *thaumazein* (“wonder”) has had great damaging consequences, at least in the field of human affairs.

Having been fooled by our senses until Galileo and Copernicus did not prevent humanity from living on the earth and no longer being fooled by our senses did not prevent humanity from committing the notorious monstrosities of the twentieth century. The suspicion against thinking and contemplating, in favour of the confidence in doing, has led, first, to the reversal of the primacy of the *vita contemplativa* over of the *vita activa*, and, second, within the *vita activa*, it has modified the hierarchy¹⁰ of the labour-work-action tripartition by putting work over action. Indeed, work is the activity of the doer, *par excellence*, and a telescope is an object produced by *Homo Faber*.

The signature of this reversal in today’s policy-making is the importance of the “means-to-end” or instrumental logic, testified by the sequence: objectives, strategies, implementation, monitoring. Policies are meant to be means to higher ends. The risk of this means-to-end logic in policy-making is to consider that any means is good as long as it serves the end. Another shortcoming of importing the means-to-end logic in the political realm is to lock-in or close down the capacity to begin. Indeed, the *Homo Faber* is judged against the conformity of his work with the original plan. But the political leader will not: “*In contradistinction to fabrication, where the light by which to judge the finished product is provided by the image or model perceived beforehand by the craftsman’s eye, the light that illuminates processes of action, and therefore all historical processes, appears only at their end*” (Arendt 1959, p. 171). Indeed, political actors know that their mandate cannot *only* be captured by a mere implementation of the original strategy. For example, although EU2020¹¹ is the overarching strategy of the Commission, it will be judged, not only on the implementation of this strategy, but more surely on its sense of opportunity in dealing appropriately with the crisis and the other events as they arise, in the course

⁹ The term Anthropocene has been coined to hint at this. “It is an informal geologic chronological term that serves to mark the evidence and extent of human activities that have had a significant global impact on the Earth’s ecosystems.” In <http://en.wikipedia.org/wiki/Anthropocene>, page view January 11, 2013.

¹⁰ In her description of the *vita activa*, Arendt establishes a clear hierarchy between labor, work and action. Labor stands at the lower end of the hierarchy because it is indexed on necessity and action at the higher end, because it is indexed on freedom. Work stands in between.

¹¹ COM (2010) 2020 final. Europe 2020: A strategy for smart, sustainable and inclusive growth.

of time, and on its ability to take initiatives. Similarly in national contexts, electoral campaigns are never won *only* on mere implementation of past promises but also on the ability to generate trust and confidence with a winning mix of vision and skilful sense of opportunism. Hence, even if it would be stupid to deny that policy-making should be transparent, soundly-based and monitored, it would be as stupid to think that transparency, sound foundations and monitoring is all that matters. Instead, what really matters is the ability to deal with the unexpected and make sense of it. Policy-makers are judged on this very ability, their ability to begin, to impulse and to make sense, much more than on their ability to achieve pre-defined goals.

One of the main current higher ends to which policy-making is deemed to be a means is “boosting growth and jobs”. This in itself has also been anticipated by Arendt, even if, in the ’50s and ’60s of the last century, there were no “growth and jobs” issue at the level they are today. She anticipated that beyond the reversal of action and fabrication, or the “*victory of Homo Faber*”, there would be a second reversal, i.e., that the lowest of the three activities in the *vita activa* tripartition—labor—would take over work and action with the “victory of the *Animal Laborans*”. Labor is the lowest of the three activities in the *vita activa*, because it is defined by Arendt as “*bound to the vital necessities*” (Arendt 1959, p. 9). It is indexed on necessity. It is highly repetitive and leaves no trace behind. It is also characterized by its processual nature, i.e. the fact that it is continuous and has no beginning nor end. Labour, in that meaning, does not allow any room for experiencing freedom, nor the pleasure of appearing in front of others and experiencing the joy of plurality. Indeed, for Arendt, what makes us human is what happens, once each of us has coped with the necessities of the biological life: “*The ‘good life’ as Aristotle called the life of the citizen, therefore was ‘good’ to the extent that by having mastered the necessities of sheer life, by being freed from labor and work, and by overcoming the innate urge of all living creatures for their own survival, it was no longer bound to the biological life process*” (Arendt 1959, p. 33).

The “means-to-end” register that has invaded the public space turns itself into an even more pervasive register: the processual register. Policy-making has not only substituted making for acting, but it has further substituted processing for making. This is a negative trend, according to Arendt, because processes leave no room for plurality and freedom, or for meaning. The policy’s increasing and almost exclusive focus on processes thereby leaves unattended a central aspect of the human condition.

One of the key features of the human condition is that human beings do not need to allocate the totality of their energy to their survival: a surplus is available. Human beings, if and when healthy, have a satiety threshold: at one point they have enough: they are not hungry, not cold, clean...and can turn to other activities, for example engaging with others or fabricating objects. That satiety threshold, or better what happens beyond it, is what allows us to experience the human condition as such and enjoy freedom.

With the centrality of the “growth and jobs” rationale in policy-making, process and necessity have pervaded the rationale for policy-making. Necessity has been hijacked to cover the survival needs of enterprises, rather than those of human be-

ings. These organisational beings have no satiety threshold. For them, by design, “more” is “better” and “enough” not part of their vocabulary! Addressing needs of a-satiabile beings, or, in other words, of beings not having a satiety threshold, leads to the hegemony of necessity at the expense of any sense of freedom and plurality. It is in this sense that what Arendt calls “the social” has indeed colonised the public space. Wealth, which was a typical private concern in Greek times, became a dominant public concern. With an endless processual perspective anchored in necessity, and the oversight or denial of the notion of satiety threshold, *phronesis*, i.e. practical wisdom and prudence, a critical value for public action in the Greek polis, is substituted by *hubris*, i.e. extreme pride, arrogance and “never-enoughness” in a systemic way.

Facing this “growth and jobs” rationale, indexed on the needs of a-satiabile organisations, there is another rationale: the one of precaution and fundamental rights. The a-satiability of organisations and their overarching influence on policy-making in the name of growth and jobs may distort the use of these counter-tracks, as they are sometimes put forward in absolute and unrealistic terms, with the purpose to counter the endless voracity of enterprises, as organisational beings. The problem is that this mechanical approach fails to grasp meanings, *on both sides*. Hence, policy-making is locked in a vision, which is either superseded by the overarching objective of “boosting growth and jobs” or by the quest for control, certainty and predictability. In Arendtian terms, one might say that policy-making is disconnected from endorsing the openness of the future, through a double regression, first by running away from freedom by invoking causality, i.e., with work taking precedence over action, and then by redoubling causality with necessity, i.e., with labour taking precedence over work. The loss of this double regression is plurality and meaning.

2.3 Policy-Making and the Devaluation of the Present

The modern overarching confidence in progress and the lock-in of policy-making in causality (means-to-end) and necessity (process) has deep consequences for the underlying representations of the past, the present and the future in policy-making: meaning and purpose are exported in the future, the present is ... what is broken, the past balances between “golden age” and “never again”!

Future is where meaning and purpose are stored: future generations are called to justify policies, notably regarding climate change policies. Long-term objectives are set, against which current decisions are justified. The long-term perspective is value-loaded, unveiling interestingly that the short term has indeed been emptied of meaning and purpose. “Short termism” is an expression denoting the inability of policy making to form appropriate judgments of what needs to be taken into account. It is the signature of the fact that policy decisions have parted company with meaning. This is highly problematic in the perspective of natality and plurality, as will be shown later.

The past is either idealised or demonised, much more rarely simply endorsed, acknowledged and made sense of in a rationale and distanced manner.

The present is what is broken. It is indeed mainly perceived and described as what is broken and requires action to be fixed! Policies are then designed to fix those problems: low-carbon, training, budgetary discipline. The present is where problems lie and the future where solutions need to be found. Tomorrow will be better than today, *thanks* to the policies. As if there would be no need for policies or institutions if there were no problem to be fixed. In that framing, the bigger the problems and the worse the present, the easier the demonstration! Metaphorically, policy-makers tend to describe the challenges as if we had to run away from a fire or to hurry up to win a supposed race. It is about pointing to the future as a fire exit from a present in flames. This systematic, even if implicit, devaluation of the present has pervasive consequences on the mood with which men and women interact with each other and with the world. It undermines the possibilities for a rich experience of plurality and freedom.

3 The Arendtian Axiomatic Reset

“The Platonic separation of knowing and doing has remained at the root of all theories of domination which are not mere justifications of an irreducible and irresponsible will to power” (Arendt 1959, p. 201). This dualism between knowing and doing mirrors the dualism between soul and body, between reason and emotion, between higher ends and mere means, etc... This dualism which seems to be designed in order to keep one of the polarities at a distance is bound to fail, because what is kept at a distance springs with even more strength than if it were recognized and dealt with. Understanding –or rather standing under– the failure of the omniscience/omnipotence utopia as the ground from which the human condition can be experienced and appreciated is a critical mental operation that we suggest can be called an “axiomatic reset”.

This axiomatic reset called for by Arendt stems from the lessons she draws from the darkest times of the twentieth century: seeking to confer to human affairs the solidity of the world of objects leads to monstrosities. This can be seen as a political version of the Heisenberg principle. This principle states that measuring the speed of a particle can only be done at the expense of changing its position: hence, to know the speed, you “pay the price” of not knowing its position and vice-versa. The political version of this principle, as highlighted by Arendt, goes as follows: if certainty is to be trumped over any other considerations, then we get only one outcome, the certainty *of the worse!* There cannot be certainty of the good and it is often good *enough* to ensure that the worst does *not* happen. This is not to say that nothing can be known, nor that nothing should be controlled, but it means that overestimating what can be controlled bears heavy consequences.

This is why Arendt inspires me thinking that the omniscience/omnipotence utopia is a fertile ground for totalitarianism. This is why she has repeatedly refused to be considered a political philosopher.

The Arendtian axiomatic reset is acknowledging natality and embracing plurality.

3.1 *Acknowledging Natality*

Humans are *not only* mortal beings. They are *also* born beings! With some irony, and a mental smile, Arendt wonders why philosophers have always considered mortality more important than natality, and ends more important than beginnings. She invites to pay much more attention to the fact that we are born beings: “*Death is the price we pay for having lived*¹²”. Her philosophy is anchored in the praise of beginnings. What makes the world sustainable is precisely that human beings come to the world in a continuous flow.

Indeed, looking at human beings as beginners brings a radically different perspective than looking at them as beings that will eventually die. Let’s call the latter the perspective of mortality and the former the perspective of natality.

The mainstream timeline representation, where the future (our death) is in front of us, and the past (our birth) is behind us, flows from the perspective of mortality. Acknowledging natality invites a shift in this representation. It is to privilege a vision of the future as what is yet to come. In the perspective of natality, the future is pushing us forward, instead of being what we foresee and anticipate. In that sense, the future is behind us rather than in front of us¹³, because we do not see it, while the past is what we contemplate and learn from.

Let’s illustrate this shift in perspectives by another couple of spatial metaphors: a road versus a spring. In the perspective of mortality, the timeline is like a road from birth to death: the present is like the point on the road where the pilgrim stands walking towards his/her destination, symbolized as the heaven, the grail or just the end. In the perspective of natality, the present is like a spring, where time, like water, flows from within the earth, and we spend our life in the present, i.e. where the water comes out.

In the perspective of mortality, the future is coloured with the certainty of our eventual death, while in the perspective of natality it is coloured by the recurrent remembrance of the “*infinite improbability*” (Arendt 1959) of our birth. In the perspective of natality, the fact that we shall eventually die does not account for a meaningful knowledge of the future; what shall eventually make sense and be worthwhile in the future is precisely what shall come as a surprise, as each of us as human beings came to this world. In that latter perspective, it is recognized that

¹² Retro-translation by the author of the *Denktagebuch* French version “La mort est le prix que nous payons pour la vie, pour le fait d’avoir vécu.” In *Journal de Pensée*, vol. 2. Paris: Editions du Seuil, p. 977 (July 1970, § 66).

¹³ The metaphorical approach to the timeline owes much to Lakoff and Johnson’s *Metaphors We Live By* (1984).

“what is” is the accumulation of infinite improbabilities, more than the predictable outcome according to causal laws. While the perspective of mortality is conducive to doubt and control, the perspective of natality is conducive to confidence and wonder.

3.2 *Embracing Plurality*

Plurality has been mentioned regularly in this contribution: it is time now be more specific about what Arendt means with this word. As already been mentioned, for Arendt, the noblest part of the human condition is not that Man mimics a monotheist God, but instead that there is plurality: “*If philosophers, despite their necessary estrangement from the everyday life of human affairs, were ever to arrive at a true political philosophy, they would have to make the plurality of men, out of which arises the whole realm of human affairs –in its grandeur and misery- the object of their thaumazein. [...] They would have to accept in something more than the resignation of human weakness the fact that ‘it is not good for man to be alone’*” (Arendt 2005, pp. 38–39).

Arendt describes plurality as the coexistence of equality, specificity and reflectivity.

First, *equality* is the component of plurality that denotes the fact that plurality is what happens between agents who recognize each other as other selves. In that meaning, equality is not considered as an objective, but as an axiomatic stance. Plurality is what happens between agents, who consider each other as other selves...

Second, *specificity*, because what makes each human a human *qua* human is precisely his or her distinctness and uniqueness. As long as we treat other humans as interchangeable entities or as characterised by their attributes or qualities, i.e., as a *what*, we do not treat them as human *qua* human, but as entities that happen to be human. Plurality is what happens between agents who consider each other as other selves and who recognize an absolute specificity to each self, to the point where this specificity trumps any other characteristic to denote their identity...

Last and by no means least, the third component of plurality is the *reflective nature of identity*. For Arendt, the disclosure of the who “*can almost never be achieved as a willful purpose, as though one possessed and could dispose of this ‘who’ in the same manner he has and can dispose of his qualities*” (Arendt 1959, p. 159), (i.e., his *what*). The *who* appears unmistakably to others, but remains somewhat hidden from the self. It is as if our identity layed in an entity standing on our shoulder or on the back of our head and was visible by all except by oneself. Our face, which represents oneself for others, is never seen by our self through his or her own eyes. It is this reflective character of identity that confer to speech and action such a revelatory role when it comes to disclosing the *who* and not the *what*. For entities for whom the *who* matters, appearance in front of others, notably with speech and action, is a necessary condition for revealing his or her identity: “*Action and speech are so closely related because the primordial and specifically human act must at the*

same time contain the answer to the question asked of every newcomer: who are you? [...] In acting and speaking, men show who they are, they reveal actively their unique personal identities and thus make their appearance in the human world[...]. Revelatory quality of speech and action comes to the fore where people are with others and neither for, nor against them, that is in sheer togetherness” (Arendt 1959, pp. 158–160).

In other words, identity is a double-key feature: one key is held by the self and one key is held by the other. Without this second key—the key held by the other—identity is not completed. This is why appearance to others in a public space is a central feature of the human condition. It also highlights why identity and interactions are so intimately connected¹⁴, and why attention¹⁵ is such a critical ability for human beings to experience plurality.

To sum up, plurality is what happens between agents who consider other as other selves, whose identity is inherently singular and partly hidden to the self, so that appearance among equals is the only way to disclose fully and experience one’s own identity¹⁶.

3.3 Plurality-and-Natality as an Alternative to Omniscience-and-Omnipotence

Omniscience and omnipotence are deemed to be postures from which anything, including the realization of any utopia, is possible, provided sufficient knowledge and control would be available. In an omniscience-omnipotence utopia’s worldview, relationships create no surprise, as a relationship is deemed to be a causal one. In that perspective, the totality of the meaning lies in the cause. There is no room for meaning in an effect. An effect is soluble in its cause. An effect is not even an end. It is literally a non-event, since the event is all included in the cause. The omnipotence/omniscience utopia echoes the mortality perspective set out above. It closes down the opening to beginnings and is antinomic to thaumazein, as what deserves wonder, in the omniscience-omnipotence utopia’s worldview, is only... omniscience and omnipotence!

The perspective of natality counters the omniscience-omnipotence utopia without falling into the drawbacks of nihilism, because it encapsulates the confidence in recurrent beginnings.

Plurality is the second element of this alternative to an omniscience-omnipotence utopia. Indeed, as we have seen above, the key features of plurality are that each entity engaged in the relationship is (i) equal (all on the same ground), (ii) singular (each *who* is unique) and (iii) partly hidden to him or herself (the reflective charac-

¹⁴ See Sect. 3D of the Onlife Background Note, Chap. 11.

¹⁵ The critical importance of attention is at the core of the chapter of Stefana Broadbent and Claire Lobet-Maris.

¹⁶ There is resonance between plurality and the approach of the relational self as proposed by Charles Ess in his chapter as well as with the related section in the Onlife Manifesto.

ter of identity). This threefold understanding of plurality (equality, specificity, and reflectivity) undermines radically an omniscience-omnipotence utopia's worldview. Indeed, the equality between the engaged persons or entities subvert the asymmetry created by the polarization in terms of cause and effect; the specificity of each entity is a firewall against considering someone as an effect soluble in a cause or as a bundle of attributes, hence, it is an anchor against instrumentalisation; lastly, the partly hidden identity undermines the omniscient-omnipotent utopia, as each of us has to admit that s/he needs the others to access to his or her identity.

From this understanding of plurality and natality springs a specific understanding of human freedom. Human freedom is not about avoiding, escaping or vanishing limits or about being as close as possible to omniscience and omnipotence, but it is instead anchored in the capacity to begin, to live among peers and access to our own identity through their recognition of our speech and action.

“Since action is the political activity par excellence, natality and not mortality, may be the central category of political, as distinguished from metaphysical, thought” (Arendt 1959, p. 11): the omniscience and omnipotence utopia, as an underlying rationale for policy-making, can thus be seen as an ill-defined transposition of a metaphysical thought into a political thought. And this ill-defined transposition threatens to collapse the public space.

For these reasons, it is important to nurture natality and plurality, as powerful antidotes and alternatives to omniscience and omnipotence. Like the Thracian servant girl laughing about Thales falling in the well while looking at the stars¹⁷, the natality-plurality tenant is laughing at the aspirant to omniscience-omnipotence trying hard to jump over his or her shadow¹⁸.

4 Reclaiming Distinctions in the Light of Plurality and Natality

4.1 Public and Private

For Arendt, the private space is where necessities are dealt with and the public space is where men—and I will add women¹⁹—enjoy plurality and freedom, through the revelatory character of speech and action: *“life without speech and without action [...] has ceased to be a human life because it is no longer lived among men”* (Arendt

¹⁷ Famous anecdote in Plato, *Theaetetus*, 174A.

¹⁸ In *Configuring the networked self* (2012). New Haven: Yale University Press, Julie Cohen is providing a remarkable analysis of the policy challenges in a hyperconnected era, in a natality and plurality perspective. I see a great proximity between natality, as set out here, and her “semantic discontinuity”.

¹⁹ The gender reading of Arendt is a most interesting issue that is not addressed in this contribution. Those interested may enjoy *Feminist Interpretations of Arendt*, edited by Bonnie Honig (1995. University Park: Pennsylvania State University Press.).

1959, p. 157). In her view, the public is loaded with more ontological dignity than the private, because it is where freedom can be experienced.

The private, as still visible in the etymology, meant originally to be deprived from being among equals. Nowadays, privacy is hardly understood as “being deprived” from anything! On the contrary: freedom is more on the side of the private, and the rule of law on the side of the public. Property is associated with wealth and accumulation, while property and wealth used to be only the pre-condition for engaging in the public realm. Action has been substituted by behaviours, or by fabrication. In tyranny, as in mass society, “*men have become entirely private, that is, they have been deprived of seeing and hearing others, of being seen and being heard by them*” (Arendt 1959, p. 53).

Freedom has changed sides: privacy is now perceived as one way to protect freedom, while publicity is more perceived as the realm of constraints (rule of law, accountability, transparency, justification, surveillance, etc...), than as the realm of enjoying plurality and freedom.

It is interesting to note that Arendt attributes the dissolution of the public/private distinction and the profound change of their meaning to political modernity. In her terms, the invasion of the social in the public realm, in the form of the nation state, which can be seen as a huge household, joined up with the ancestral “*great temptation, for men of action no less than for men of thought, to find a substitute for action in the hope that the realm of human affairs may escape the haphazardness and moral irresponsibility inherent in a plurality of agents*” (Arendt 1959, p. 197).

The Arendtian axiomatic reset is not about going back to the Greek polis: pushing labour and work out of the public sphere, and concentrating politics on action only is not a credible option in the twenty-first century. However, the Arendtian tripartition of the *vita activa* in labour, work and action remains inspirational as it reminds us that labour (and necessity) and work (and causality) cannot account for the totality of the human experience: action (and plurality and freedom) has to have a place! For Arendt, the meaning of politics is freedom. If indeed, omnipotence and omniscience were a possibility, there would be no room for politics, as politics is precisely the place where we experience the noblest part of the human condition, i.e. plurality and natality. In the *vita activa* of the twenty-first century, the labour-work-action tripartition should not be seen hierarchically, i.e., with action, the public and the agora on the top and labour, the private and the home on the bottom: instead, labour, work and action form a trio generating a 3D-space. Failing to recognize action as a third dimension ends up in a degenerative perception of the human condition and a flattening of the human experience.

Arendt mapped the private/public distinction with idealized representations of the home and the agora as they were supposed to be in Greek Antiquity. There and then, the private was the household, the place where women and slaves took care of the necessities of life, while the public was the space where men, freed from the necessities of life, could experience freedom, among equals. It is obvious that the public/private distinction does not correspond anymore to the distinction agora/home. It is my view that the public/private distinction can most usefully be redescribed in the twenty-first century by indexing it primarily on the freedom/necessity polarity, and

by leaving aside the space distinction (household vs. agora), or the gender or social one (men vs. women and slaves).

With that in mind, the private realm is where and when humans are bound by necessity, deprived from appearance among equals, and thereby, confined in a pre-political, infra-human life, while the public realm is where and when human beings experience plurality, i.e. equality, specificity and reflectivity, notably through speech and action. The experience of appearing to others as a *who* or as a *what* has little to do with the place where the relationship takes place. Consequently, the distinction between the public and the private has more to do with what is at stake in the relationship rather than *where* it takes place.

If we are considered, not as ourselves, but as a number (ID-number), an attribute (the amount of wealth, or a set of skills) or as a function (a consumer, a parent, a job holder), this is not a public appearance, but rather a private setting even if the relationship is between a so-called private entity and a so-called public entity. Indeed, then, the *who* does not matter; there is no plurality, but only functional interactions that can be modelled, calculated, and anticipated. This functional approach to relationships is close to what was meant by being confined in the home, as the home is the metaphor for the place where persons, instead of appearing to others for who they are, are confined to fulfilling the tasks they are expected to.

Arendt recognizes that plurality can best be experienced at city-level. “*The larger the population in any given body politic, the more likely it will be the social rather than the political that constitutes the public realm*” (Arendt 1959, p. 39). The Nation-State is where conformity and mass behaviour substitutes for plurality. This can then only be worse for continental organisations, such as the EU, or for global governance bodies, such as the UN! With big numbers, plurality degenerates into mere and unendorsed interdependence, while natality and its inherent openness and unpredictability are perceived only under the categories of uncertainty and risk.

4.2 *Agents, Artefacts and Nature*

Reclaiming a public/private distinction where the public is where plurality is experienced while the private is the realm of functionality leads to the need to recognize that plurality can also apply to intermediaries, legal entities, organisations, institutions, not only to humans. Let’s call ‘agents’ those beings who recognize their interactions with the other beings as one of plurality, i.e. beings (i) granting other similar beings with equal status to themselves, (ii) appearing for their *who* and being recognized as such, and (iii) partly blind to themselves and aware that it is by their appearance to others that they experience identity and freedom.

With that in mind, the EU can be seen as a public space where Member States, as agents, experience plurality. The EU can then be seen as a space of appearance for Member States, where they disclose their “*who*” and not their “*what*” and where

they depend upon each other to experience who they are. The same applies at UN level. Privileging plurality over functionality is recognizing that, for the public space, reaching goals matter much less than securing a space where agents whose identities are singular and reflective interact together in a constructive and meaningful way²⁰. It is also recognizing that freedom does not flow from sovereignty and power but from interactions and meanings.

This characterisation of agents, be they human or not, as beings acknowledging that their freedom is anchored in plurality rather than in sovereignty, offers also a criterion for distinguishing agents from artefacts. Indeed, we suggest stating that agents are those beings with a *who* that matters, while artefacts are those beings whose identity correspond *only* to their external and functional description, i.e., beings for which the *what* (and maybe the *how*) only matters. An artefact is an entity whose function corresponds to what it is meant for. It is fully heteronomous. Going back to Arendt tripartition, i.e., labour, work, action, artefacts are the outcome of work, while agents are those engaged in action. Hence, the difference between agents and artefacts cannot be based on objective differences about their essence, but rather on the type of interactions they are engaged with, i.e. either plurality or functionality, or put in other words, action or work. If humans are considered only for their attributes or the tasks they have to fulfil or the role they have to play, although they are humans, they are *artefactualized*, and this only by the way they are represented, but nonetheless very effectively. Once someone is represented as an artefact, there is no further barrier against considering him or her as such.

So, agents are those beings self-aware that plurality is a key component of their own condition, i.e. those beings granting other similar beings the triple recognition underlying plurality: (i) the recognition that they are equal, (ii) the recognition that they are unique and specific, and (iii) the recognition that they are in need of the others to experience their own identity and freedom.

Then, if agents are those who, aware of their plurality, inhabit the world and shape it, notably with artefacts they build and control, nature can then be defined as what is beyond the control of agents, what stands around them. It includes artefacts, sensors, even robots to the extent that they escape agents' control, and have become part of the environment that they have to navigate within and make sense of. This artefactual nature is the reservoir of new beginnings, as we used to consider "virgin nature" to be, before sustainability issues arose.

Hence, the difference between nature and artefacts is not anymore based on the difference between what is "given", on the one hand, and what is fabricated, on the other hand, but rather on the difference between what is beyond our control, on the one hand, and what is under control, on the other hand. Of course, this has also incidences on the distinction between what we have to cope with and what we can be held responsible²¹ for. The dividing line separating the remit of fate from the remit of responsibility is changing in function of time, space, and scale or granularity.

²⁰ This echoes with Richard Rorty in *Contingency, Irony and Solidarity*, Cambridge University Press, 1989; and with the notion of multi-agent-systems (MAS) as proposed by Luciano Floridi in his chapter.

²¹ Responsibility issues are developed by Ugo Pagallo and Judith Simon in their respective chapters.

Practical wisdom in a hyperconnected era consists, for each agent, be they humans, organisations, or institutions, in acknowledging where this dividing line lies, in each life situation, and in a perspective of natality and plurality.

Mistaking agents for artefacts brings about a world whose horizon is omniscience and omnipotence, and comes dangerously close to totalitarianist forms of thinking. Mistaking nature for artefacts lead to misallocation of responsibilities, either by overestimating them or underestimating them²².

5 The Arendtian Axiomatic Reset in a Hyperconnected Era

5.1 *The Proper Mix of Literacy and Policy...*

If action is indeed characterised as a beginning whose consequences can never be undone, scientific discoveries and technological developments are action by *excellence*, as they cannot be undone and correspond to new beginnings. Thinking about what happens to us and framing the challenges in a hyperconnected era is one of our generation's tasks, and this ought to be done by balancing fears with confidence and control with wonder. Indeed, to reinforce and nurture the public space in a hyperconnected era, there is an urgent need to balance the omniscience-omnipotence utopia, pervaded by fear and control-seeking, with the plurality and natality perspectives, pervaded by confidence and wonder. This balancing generates a space where fears and risks are compensated by the confidence in beginnings, shared intelligence and practical wisdom. It generates a space where meanings are rooted in "in-betweens" rather than in "the more, the better" and where challenges are approached with "both/and" dualities rather than with "either/or" dilemmas.

To some extent, it invites to shift away from the dominance of a risk governance approach to a literacy approach. Literacy is the set of skills, understood in a wide sense, which enables the experience of plurality. Hence, abilities to communicate are central to literacy understood in the wide sense. In a pre-digital context, literacy is about reading and writing, but it goes much beyond the technical ability and reaches out to the ability to understand, to contextualize and to be persuasive. For example, each of us learn very young and, most often, very painfully, the subtleties of communication. We all experienced the differences between what we want to say to our mother or to our best friend, or between what we want to say in confidence, and what we want to say loud and clear. When things go wrong, we learn and we adapt, and little by little, we acquire that extended literacy. Literacy is made of a mix of technical, social and ethical skills and considerations. It is also highly evolutive.

²² This echoes the point made in the paragraph 2.1. of the Onlife Manifesto: "...it is hard to identify who has control of what, when and within which scope. Responsibilities and liabilities are hard to allocate clearly and endorse unambiguously".

As put nicely by Siva Vaidhyanathan²³, in the hyperconnected era, “we are all babies”! Indeed, who is aware of what is accessible to whom when engaging on social networks, browsing on the internet, buying online, walking around with a mobile phone on, *etc...* Acquiring a digital literacy²⁴ is a collective and societal endeavour that requires an uptake and “naturalisation” of knowledge and codes, about the different modes of communication in a hyperconnected era, and their consequences for plurality. It is about adapting common sense, fairness, respect, responsibility, freedom, and privacy into the new worldly conditions. Shaping this new version of literacy, which can be called a digital literacy, is an emergent and ongoing process: there is no monopoly for taking part in such a game. Policy making has surely a contribution to make in this endeavour, but it would be wrong to believe that policy can deliver such literacy, as it is wrong to believe that policy could prevent risk in an absolute manner. In the societal and multi-stakeholder endeavour of shaping this emerging literacy, there is a role for policy-making, as there is a role for each other stakeholder. Policy-making, by being aware of the current emergence of new forms of literacy, can identify where and how it can be responsive and add value to the workings of societal intelligence and the ongoing reshaping of the value content of notions such as privacy or identity, and adapt the policy frameworks accordingly²⁵. This is not an easy task, as it may call for fundamental and uncomfortable revisions, leading to very sensitive transitions. In the next section, we will exemplify how policy and literacy can complement each other to address new challenges in a hyperconnected reality.

5.2 *Coping With the Risk of “Reality Theft”*

There are circumstances where it is accepted that fooling each other is part of the game: for example, on the April fool’s day. It is also societally acceptable to fool someone to his or her own advantage, for example with a surprise party on his or her birthday, or else to fool someone with his or her consent, for example in artistic performances, where it is particularly appreciated when the scenery and the performance is close to reality so that it is credible. However, beyond these very special circumstances, societies rest on a general consensus that fooling should be avoided, and there are many rules, institutions and infrastructures to outlaw and make life difficult to those trying to fool their peers. Fooling others is indeed breaching plurality. Beyond being inherently unfair, it leads to a “suspicion of all against all”, dissolves trust, prevents any form of togetherness and dissolves plurality. Fooling others knowingly and purposefully results *de facto* in a self-exclusion from the community of peers and from the ideal public space. These considerations hint to the fact that there is a link between trust, literacy and policy. It is part of literacy to distinguish socially acceptable fooling and unacceptable fooling. It is also part of

²³ <http://www.cbc.ca/spark/2011/05/full-interview-siva-vaidhyanathan-on-the-googlization-of-everything/>.

²⁴ Doug Belshaw is one of the scholars that have developed a very interesting perspective on what a digital literacy entails (e.g., on his book *The Essential Elements of Digital Literacies*).

²⁵ This echoes with the notion of critical technology accompaniment proposed by Peter-Paul Verbeek in his chapter.

literacy to be equipped to cope with or resist acceptable or basic fooling tentatives. In that respect, policy and regulation are only a complement to literacy and common sense.

With that modest attitude, it is important to rethink and actualise what fooling means in a hyperconnected era, particularly in view of the blurring between reality and virtuality²⁶. There are at least two facets in this rethinking: (i) how do the “old” means of dealing with this issue survive in the hyperconnected world and (ii) are there new issues arising?

In the pre-digital world, the distinction between an original and a copy used to be a mean to counter fooling and to help each agent distinguishing “reality” from fake: in the digital world, the distinction between original and copy has lost the realistic dimension on which it has been established. Hence, for example, all measures that were built on this distinction need to be fundamentally rethought in a hyperconnected world²⁷, to avoid perpetuating outdated distinctions, which stop being effective and lead to the proliferation of an absurd complexity. This is only mentioned as an example; here is not the place for jumping to concrete policy recommendations.

Beyond the dissolution of the distinction between original and copies, the hyperconnected era expands the possibilities for “reality theft”, in the following more fundamental way. In the pre-digital era, it is reasonably easy, for an agent, to distinguish if the environment encountered has been “made up” for, or tailored to, him or her. In these early days of the hyperconnected reality, where “we are all babies” when it comes to digital literacy, this distinction is much more difficult to make. Most of us are unable to distinguish if and when the price offered in an online environment or the result of a search depend from the use by the provider or by the search engine of personal data or profiling information, or if they would be the same for anybody else. Why does it matter? Let’s compare this to a pre-digital situation by imagining the following situation: I walk around in a shopping mall and stop in front of a dress I find beautiful. Imagine that the more I look at the dress the higher the price! I would be enraged and walk away, because I have the means to notice it. This is part of the pre-digital mix of literacy, policy and regulation. In the online environment, there is no equivalent easy and commonsensical way to identify if, when the price goes up, it is because the last seats of that flight (if I am booking a flight) have been taken by others, or if it is because the operator is making use of my desire to buy a flight ticket to raise the price. It is my view that people are entitled to know, when engaging on the web, if the result of their search or the price offered to them is making use of information about them, or not²⁸. It has to do with fairness and dignity, more than with privacy. It is also an enabler of plurality. There may be a role for policy-making to accompany and facilitate the deployment of an increased digital literacy, by ensuring that agents have the mean to orient themselves in a fair way in

²⁶ See Sect. 3A of the Onlife Background Note, Chap. 11.

²⁷ This issue, among others, has been pointed to in a meeting discussing the societal perspective on cybersecurity <http://cordis.europa.eu/fp7/ict/security/docs/societal.pdf>.

²⁸ The challenge of profiling is addressed more fully in Mireille Hildebrandt’s chapter.

the online sphere and in the onlife experience. Here, the point is not to shape means of control, but rather to provide tools for enabling each one to orient him or herself.

6 Conclusion: Reclaiming Plurality

In this contribution, I have argued that acknowledging natality and embracing plurality is a much-needed stance for making sense of what happens to us with the digital transition. Indeed, staying exclusively focused on an omniscience/omnipotence utopia, and the control-seeking perspective pervading it, prevents policy-makers and all other stakeholders from experiencing freedom in this emerging hyperconnected era and from benefitting of the societal intelligence and resilience. Those arguing for the need to seek more control often do so on the basis that failing to do so would lead us in a dangerous relativistic “anything goes” area. The fear of this “anything goes” is ignoring—at least—three essential features of the human condition, i.e., (i) that human beings are not only “goal seekers”, but also “meaning shapers”, (ii) that control-seekers are always short of their own expectations and sooner or later self-defeated, and (iii) that human beings have a conscience and host an inner dialogue, which is what makes plurality possible. If, by accident, this faculty of inner dialogue, which is nothing else but thought, would be denied so that we would all perceive others as merely functional beings, then indeed, it would be the end of the presence of human beings on earth²⁹.

The three proposals of the Onlife Manifesto, i.e., the relational self, the literacy approach, and the need to care for attention, are not “ready-made” solutions meant to solve problems in an instrumental way. They are not items issued from some minds to be transmitted to other minds, like packages on a packet-switched network. They are instead proposals that can bear fruits only after having been metabolized by those receiving them.

The relational self denotes those in need of plurality, that is those beings with a satiety threshold, not reducible to their attributes or to a function, and whose identity is revealed by speech and action in presence of others. It points to the need of refraining from thinking about ourselves and the other selves in functional ways and recalling that others, like ourselves, are in need of meaning. The mutual interactions of relational selves give rise to the production of new meanings and affordances, which constitute the ground for the literacy of a society at a given time. Policies should be in resonance with and responsive to the development stage of that literacy. Last, attention is the best we have to offer to each other, it is what links together the fact of being oneself and of appearing to others; it is the fluid that makes plurality a reality: considering attention as a commodity to be merely captured and exchanged can only lead to a serious deterioration, if not a dissolution, of plurality.

²⁹ This is one of my takes from Arendt’s *Eichmann in Jerusalem: a report on the banality of evil* (1963).

All this calls for policy-making to nurture a wide and inclusive understanding of the rationale of its action: besides interests, costs and benefits, optimisation and trade-offs, a key purpose of policy-making is to adapt the regulatory framework to meanings, norms and values as they emerge and crystallise in society, and to maintain and foster a vivid sense of natality and plurality. Indeed if, together with Arendt, we believe that the purpose of politics is freedom, it is high time to endorse and make sense of the world we are living in; it is high time to remember humans, and anybody else claiming an agent's status, are deemed to be equal, singular and ... in need of each other to be recognized as who they are. Plurality takes place among agents who recognize their satiety and interact in order to reveal their identity. It is high time for plurality to substitute, or at least complete, the other metaphors underlying policy-making, i.e. the invisible hand (which encourages the pursuit of one's own interest, decoupled from all forms of empathy towards other selves) or the competitive race (which considers others as competitors to be defeated). Generationally speaking, the task of the "day" is, for all, to nurture a common understanding of what plurality means in a hyperconnected era, and for policy-makers, to partner with society, instead of parenting it!

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Designing the Public Sphere: Information Technologies and the Politics of Mediation

Peter-Paul Verbeek

1 Onlife Technologies

After a few decades of living with Information and Communication Technologies, we have got so much used to their presence in our daily lives, that we hardly realize that the societal and cultural revolution they are causing has only just begun. While most of the social and political discussions regarding ICTs still focus on privacy issues and on the impact of social media on interpersonal relations, a whole new generation of ICTs is currently entering the world, with potentially revolutionary impacts that require careful analysis and evaluation.

Two examples of this new generation of technologies can illustrate this. First of all, there is the rapid development of ‘embedded’ information technology. ICTs are starting to merge ever more intricately with our physical environment. Walls, beds, doors, cars—many everyday objects are currently being equipped with forms of ‘ubiquitous computing’ or ‘ambient intelligence’, as a large electronics multinational has come to call it (Aarts and Marzano 2003). Objects in our lifeworld, in other words, are becoming intelligent. Hospital beds can detect if patients fall out of their bed or step out of it. Doors in geriatric homes can determine who is allowed to go outside and who is not. Cars are increasingly taking over tasks that used to be reserved to humans, like lane parking, making emergency stops, and refusing to change lanes if it is too dangerous to do so.

This intelligification of our material world will have important implications. Public space will literally become space with a public character—the more it becomes aware of us, the more we need to become aware of the fact that that is the case. Moreover, intelligent objects are increasingly equipped with explicitly persuasive abilities. Smart mirrors in waiting rooms of medical doctors can give us feedback on our lifestyle when entering the waiting room. Smart training equipment in gyms can persuade people to exercise just a bit more. Smart websites attempt to persuade users to buy specific things, or to become a member of specific organiza-

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tions. Our material world is developing into an active and intelligent counterpart, rather than a mute, stable and functional environment.

At the same time, our own access to the world is rapidly changing. With the advent of technologies like Google Glass, the phenomenon of ‘augmented reality’ is rapidly gaining influence. Google Glass consists of a pair of small, transparent monitors and a camera. The device provides an extra layer of information about the people, objects and images one sees. It has the potential to recognize the faces of people you meet, and provide all information available about them instantaneously—without these people noticing this. It makes it possible to send and receive messages, than can be composed with eye movements, voice input, or touch. This will enable people to communicate with each other in new ways, again without other people noticing it.

If this type of augmentations becomes widespread, this will have enormous implications for virtually all dimensions of society. Educational processes will need to be reinvented, when all information is available to anybody all the time. The boundaries between the public and the private will need to be drawn again, when a quick glance at somebody’s face reveals all their activities on the internet. Security policy, privacy legislation, commercial activities—it is hard to imagine a sphere of society that will not be affected by the advent of augmented realities. Our lives get increasingly interwoven with online realities—we get ‘onlife’, as the contributors to this book have come to call it.

New information technologies, in sum, put us potentially at the dawn of a new era. While many people are focusing on the biotechnological revolution, and the convergence of nanotechnology, biotechnology, information technology, and cognitive science, companies like Google and Philips are redesigning the world. How to understand these changes? And how to evaluate them?

2 Onlife Relations

Understanding the relations between humans and technologies has been one of the central activities of the philosophy of technology in the past decades. In mediation theory, the central idea has developed that we need to blur the boundaries between human and technology to understand the social role of technologies. Humans and technologies cannot be located in two separate realms, but need to be understood in their interrelations. At the basis of the theory of technological mediation is the work of the North-American philosopher Don Ihde. Ihde analyzes the various shapes that the relations between humans and technologies can take (Ihde 1990). His central thought is that technologies help to shape the relations between humans and world. Whenever a technology is used, it becomes a mediator between its users and their environment, helping to shape the character of the relations between both.

Ihde distinguishes four forms the relations between humans and technologies can take on. New information technologies like Google Glass, though, urge us to expand his framework. First, there is the ‘embodiment relation’, schematically in-

licated as (*human—technology*) → *world*. In this relation, technologies are extensions of the body, as it were. Humans experience the world ‘through’ the technologies here, as when wearing glasses, or using hearing aids. A relation with the world is also possible from the ‘hermeneutic relation’, though, schematically indicated as *human* → (*technology—world*). Some technologies give us access to the world by giving a representation of it, that requires human interpretation in order to be meaningful—hence the name ‘hermeneutic’—like a thermometer that gives a number rather than a sensation of temperature, or a sonogram that gives a visual representation of an unborn child on the basis of reflected ultrasonic soundwaves. A third relation is the so-called ‘alterity relation’, schematically indicated as *human* → *technology* (*world*). In this relation there is a direct interaction between humans and technologies, like when someone operates a copying machine, or repairs a car. The fourth and last relation Ihde distinguishes is the background relation, indicated as *human* (*technology/world*). From this relation, technologies have an impact on our relation with the world, without being explicitly experienced themselves. An air conditioning that automatically switches on and off, for instance, creates a context for the experience of human beings by producing noise or creating a specific temperature of the room.

In all these four human-technology relations, technologies moves ever further away from the human being, as it were: from an extension of our senses to a context for our experiences. Ihde’s analysis has made possible an entirely new direction in the philosophy of technology. Rather than investigating what ‘Technology’ does to ‘Humanity’ and ‘Society’, Ihde’s approach made it possible to investigate how specific technologies mediate human actions, experiences, and interpretations. Against the gloomy theories of alienation that have been fashionable for a long time, it now becomes possible to investigate in more detail how technologies actually help to shape new relations between humans and world. Scientific instruments help scientists to understand reality; medical-diagnostic technologies help to shape interpretations of health and illness; social media reshape social relations and friendships.

New information technologies like Ambient Intelligence and Google Glass, though, urge us to expand this framework (Verbeek 2011). One more step ‘further away’ from the human being than the background relation—but ‘closer to us’ in another sense—is made by technologies that create an environment in which we are immersed, like the smart environments with ambient intelligence that I mentioned above. The relations we have with such environments can be indicated as ‘immersion’. Schematically these relations look like *human* ↔ *technology/world*: the technologies merge with the environment, and interact with their users.

Google Glass adds a new type of relation at the other end of the spectrum. Rather than merely being ‘embodied’, it adds a second layer to our world, which is often called an ‘augmented reality’. In addition to the sensory relation with the world ‘through’ the glasses, it also offers a representation of the world. Technologies like this offer not one, but two, parallel relations with the world. We could call this a relation of augmentation. This relation consists of two parallel circuits: (*human—technology*) → *world* and *human* → (*technology—world*). And this is quite a revolutionary step in the relations between humans and their world. Human intentional-

ity, as phenomenologists call the human directedness at the world around them, is developing a bifurcation. Our attention is increasingly divided between two parallel tracks.

3 Onlife Mediations

New information and communication technologies, to be short, create radically new relations between human beings and the world around them. Not only the structure of these relations deserves further inquiry, but also its implications for social relations and human existence. What do all of these new information and communication technologies do to us, from the new and unanticipated relations we develop with them? I will limit myself again to the relations of ‘immersion’ and ‘augmentation’ that I described above.

In the relation of immersion, the material environment changes from a relatively stable background of our existence into an interactive context that interferes in novel ways with the ways we live our lives. Smart environments with ‘ambient intelligence’ are changing the character of the spaces in which our lives take shape. When public spaces are equipped with smart cameras that can detect suspicious behavior, new norms will be installed. When the doors in geriatric hospitals will have RFID chip readers, they can automatically determine who should be allowed to go out and who does not. When toilets will have sensors that can detect specific substances in our urine and feces, new norms regarding health and illness, and new regimes for healthcare will emerge.

Moreover, these ‘intelligent’ technologies can also interact with our decision-making processes. Under the name of ‘persuasive technologies’, products and systems are being developed to persuade people to behave in specific ways. School toilets can detect if children have washed their hands when they leave, and urge them to do so when they forget. Smart mirrors in the waiting room of medical doctors can recognize one’s face, and morph it into an image of what you will look like in 10 years if you don’t give up smoking, or eating too much, or working too hard. Smart windows in shops can determine the direction of one’s gaze and give extra lighting to articles that seem to interest specific people.

In the configuration of augmentation, technologies like Google Glass have the potential to radically change the character of social interactions. The mere look at somebody else can be enough for a face recognition system to look this person up on the Internet. This would result in a drastic reconfiguration of the boundaries between the public and the private. All one’s private activities that are on the Internet will be much more easily accessible. And all resulting information will be available in social interaction in an asymmetrical way, because people cannot see if the person they meet is simultaneously checking them on the Internet.

Also, the permanent availability of email, messaging services and Internet information will give us an increasing ‘double presence’ in the world. Our physical, bodily presence in concrete spaces and situations will increasingly be accompanied

by a virtual, but still bodily-sensorial, presence at other places, with other people, and in different situations. Our being-in-the-world, as Heidegger called it, is developing into a being-in-multiple-worlds.

This quick exploration of the new configurations of humans and technologies shows that their implications are enormous. New information technologies will install new norms for human behavior, have a political impact on how we interact in public space, help to shape the quality of interpersonal interactions, and so on and so forth. No realm of human existence will remain unaffected. Our lives will be mediated in radically novel ways.

At the same time it is often hard to see these mediations, because information technologies increasingly challenge the frameworks by which we have come to understand ourselves and the world we live in. Ever since the Enlightenment, we have understood ourselves as relatively autonomous subjects in a world of objects that we can investigate, manipulate, and appreciate. But the self-evidence of this metaphysical framework—in which subjects have intentions and freedom, while objects are passive and mute—is rapidly fading away, now that information and communication technologies have started to challenge it seriously.

On the one hand, the advent of ‘social media’ has urged us to acknowledge how deeply intertwined our sociality has become with materiality. When Marshall McLuhan claimed that ‘the medium is the message’ (McLuhan 1994/1964), it was hardly possible to foresee that the mediating power of new media would become so strong that a few decades later people would start to wonder if Google is “making us stupid” (Carr 2008) and if virtual sociality is making us be “alone together” (Turkle 2011). On the other hand, the examples of ‘smart environments’ with ‘ambient intelligence’ have shown that our material environment now has unprecedented social capacities, persuading us to behave in specific ways, or reorganizing the character of public spaces.

Information technologies have made the boundaries between the social subject and the material object more porous than ever before. Social relations appear to be thoroughly mediated by technologies, while new technologies appear to have a profound social dimension. This situation is a serious challenge, not only for our metaphysical frameworks, but also for our self-understanding and for our ethical and approaches to technology. How are we going to deal with this new situation?

4 Onlife Governance

The blurring of the boundaries between humanity and technology that new ICTs are bringing about has serious implications for our ethical and political reflection. Implicit in many ethical approaches to technology, and especially regarding invasive technologies like ICTs, after all, is the model of a *struggle* between humans and technologies (see also Verbeek 2013). While some technological developments can be beneficial, this view holds, others compose a threat to humanity, and therefore the role of ethicists is to assess if technologies are morally acceptable or not.

In ethical and political discussions regarding ICTs, the theme of the ‘Panopticon’ often plays an important role. Inspired by Michel Foucault’s analysis of Jeremy Bentham’s prison design—a dome with a central watchtower from which all prisoners can be observed without them knowing if they are being watched or not – some people fear that ICTs are creating a panoptic society in which privacy becomes ever more problematic, and in which asymmetrical power relations can flourish. (Foucault 1975)

However important it is to develop and maintain a critical attitude toward new information and communication technologies, this model of a ‘struggle’ between technology and society is still based on the dualist metaphysics of subject versus object, that ICTs themselves have outdated by reconfiguring the boundaries between subjects and objects, as described above. When human beings cannot be understood in isolation from technology, and vice versa, approaching their relation in terms of struggle and threat, therefore, is like giving a moral evaluation of gravity, or language. It does not make much sense to be ‘against’ them, because they form the basis of our existence. Technologies have always helped to shape what it means to be human. Rather than opposing them, and putting all our efforts in resistance and protest, we should develop a productive interaction with them.

But how can such an interaction still be critical, when the boundaries between humans and technologies disappear? If human practices and experiences are always technologically mediated, there does not seem to be an ‘outside’ position anymore with respect to technology. And if there is no outside anymore, from where could we criticize technology?

To be sure, a hybrid understanding of humans and technologies does not imply that all roles of technology in human existence are equally desirable, and that human beings should redefine themselves as powerless victims of the power of technology. It does imply, though, that the ‘opposition model’ of humanity and technology might not be the most productive model if one wants to change undesirable configurations of humans and technologies. Ethics should not focus on determining which technologies should be allowed and which should not. Technological development will continue, and human existence will change with it. *Tempora mutantur, nos et mutamur in illis*: the times are changing, and we change in them. The main focus of ethics, should not be on *technology assessment* but on *technology accompaniment*. Rather than keeping humanity and technology apart, we should critically accompany their intertwinement.

In order to articulate such an alternative model for ethics, it is helpful to connect to the later work of Foucault (see also Verbeek 2013). In his lecture ‘What is Enlightenment?’ (Foucault 1997), Foucault develops an alternative account of the phenomenon of ‘critique’. Foucault is looking for an answer to what he calls ‘the blackmail of the Enlightenment’. This blackmail consists in the pressure that is exerted upon those who want to criticize the Enlightenment, because all their attempts are typically explained as being ‘against’ the Enlightenment. Anyone who dares to do open this discussion immediately raises the suspicion of being against rationality, democracy, and scientific inquiry. Foucault, however, explores if an alternative understanding of Enlightenment would be possible. And this exploration

is of utmost importance in the context of the ethics of technology as well. Blurring the boundaries between humans and technologies, after all, can easily be explained as giving up on ethics: because there is no clear boundary to be defended anymore, it might seem that 'anything goes'. Therefore, an alternative model for ethics needs to be developed.

Foucault's answer, however trivial it may seem, is to reinterpret Enlightenment as an *attitude*, rather than the beginning of a new era. For Kant, as Foucault explains, Enlightenment was primarily a way out of "immaturity": using "reason" rather than accepting "someone else's authority to lead us in areas where the use of reason is called for" (Foucault 1997, p. 305). This requires critique: only critique can tell us under which conditions "the use of reason is legitimate in order to determine what can be known, what must be done, and what may be hoped" (Foucault 1997a, p. 308). But for Foucault, critique must not be understood as an attempt to *transcend* the world—as Kant did—but as an attitude of always looking for the *limits* of what seems to be given and self-evident.

Foucault, in short, reinterprets critique—the 'enlightened' activity par excellence—as a form of practical self-inquiry. Critique means: investigating what has made us the beings that we are, what conditions our existence and what has shaped our current way of living. And, most importantly, it does not require an 'outside' position, but can only happen on the basis of positioning ourselves 'at the limit'. The human subject, after all, is always situated within the world to which it has a relation, and therefore critique can never come from outside. We can never step out of the networks of relations that help to shape our existence, to phrase it in a Latourian way, but this does not imply that we have to give up on critical reflection and self-reflection.

Foucault's alternative Enlightenment offers an interesting escape from the specific shape that the blackmail of the Enlightenment has taken on in the ethics of technology. The fundamental intertwinement of human beings and information technologies implies that the frameworks from which we criticize these technologies are always mediated by these technologies themselves. We can never step out of the mediations in which we are involved. The farthest we can get is: at the limits of the situation we are in. Standing at the borders, recognizing the technologically mediated character of our existence, our interpretations and judgments, our practices and preferences, we can investigate the nature and the quality of these mediations: where do they come from, what do they do, could they be different?

Rather than letting our selves be blackmailed by the Enlightenment—fearing that the boundary-blurring between technology and society would make it impossible to have a reasonable and normative discussion about technology—there is an alternative possibility for the ethics of technology. Not the assessment of technological developments 'from outside' is the central goal of ethical reflection then, but rather its accompaniment 'from within', using a concept from the Belgian philosopher Gilbert Hottois (Hottois 1996) and the recent work of Paul Rabinow (Rabinow 2011). The crucial question in such a form of 'ethical technology accompaniment' is not how we could impose 'limits' to technological developments, but rather how we can deal in responsible ways with the ongoing intertwinement of humans and technologies. The limit-attitude leads to an ethical approach that is not preoccupied with

the question of whether a given technology is morally acceptable or not, but that is directed at improving the quality of our lives, as lived with technology. Standing at the limits of what mediates our existence, we can evaluate the quality of these mediations ‘from within’, and actively engage in reshaping these mediations and our own relations toward them.

It needs to be emphasized that this does not imply that all mediations are equally desirable, and that there can never be grounds to reject technologies. Rather, it implies that ethical reflection needs to engage more deeply with actual technological artifacts and practices. Giving up on an external position does not require us to give up all critical distance; it only prevents us from overestimating the distance we can take. An ethics of ‘technology accompaniment’ rather than ‘technology assessment’ should in fact be seen as a form of ‘governing’ the impact technology can have on one’s existence and on society. It replaces the modernist ambition to ‘steer’ technology and to ‘protect’ humanity against technological invasions with a more modest ambition to ‘govern’ technological developments by engaging actively with their social and existential implications.

5 Onlife Citizenship

This critical accompaniment of ICTs can only take shape in concrete practices of design, use, and implementation, in which human beings can get critically involved in how technologies mediate their existence. A critical use of information technology then becomes an ‘ascetic practice’, in which human beings explicitly anticipate technological mediations, and develop creative appropriations of technologies in order to give a desirable shape to these mediations. At the same time, the design of information technology becomes an inherently moral activity, in which designers do not only develop technological artifacts, but also the social impacts that come with it. And policy-making activities regarding the implementation of new technologies then become ways of governing our technologically mediated world.

Let me return to one of the examples I gave at the beginning of this contribution in order to elaborate how this critical accompaniment of technologies could be a fruitful form of ethical and political reflection on technology. As indicated above, one of the most salient aspects of Google Glass is its impact on interpersonal relations. The ‘doubling’ of the relations between humans and world that it brings about adds a second layer to the communication between people, which remains invisible to the other person. When two people meet, they cannot see which information the other has available about them. Google’s search engine might reveal private information on the basis of face recognition software, or it might confuse the person with somebody else. Because this parallel information is only available for the person wearing the device, an asymmetry comes about that makes open communication impossible and that radically transforms the character of public space and public life.

Dealing with this new technology, then, requires more than asking oneself the question if we should allow it to be applied in society, and if so, under which conditions. Rather than aiming for a ‘yes’ or ‘no’, ethical reflection should ask itself *how* this technology could get a desirable place in society. And for answering this question, we need to think through the ethical dimension of the design, implementation, and use of this technology.

First of all, in the context of use, people will have to develop ways to appropriate this technology, and to integrate it in their daily lives. Typically, people develop codes of use for dealing with technologies that have an impact on social life—just like it has gradually become normal that people do not answer incoming calls on their cell phones when they are in a conversation, for instance. An obvious code that could develop would be that people put off their Google Glass when they are in a conversation, to prevent that your conversation partner is searching information about you on the Internet, or is checking his or her email simultaneously. Still, the meaning of a quick glimpse at each other’s face in public space will change forever, because everybody knows that the Google Glass enables people to look right through each other. Dealing with implications like this is not only a challenge for users, but also requires the attention of designers and policy makers.

Designers should be more aware of the mediations that can occur when people use the glasses, in order to make a responsible design. This requires experimentation, and creative redesign. When, for instance, one of the main problems appears to be the possibility that somebody secretly checks someone’s face on the Internet, it could be important to introduce a little warning light that gives a signal when the face recognition system is on. This would remove an essential element of the hidden character of what the glasses can do, and therefore restore part of the symmetry that this technology takes away. Another option could be to redesign the software in such a way that it can only activate face recognition when looking each other explicitly in the eyes for more than five seconds. When people engage in this form of contact, they have reached a level of intimacy that is far beyond the regular quick exchange of looks in public spaces. Designs like this can make it possible to remain relatively anonymous in public spaces, while making contact with each other might also become more easy when both parties are open to that and allow more substantial eye contact.

Also the character of the information that is revealed, should be part of the design of the technology. Google could give (or be obliged to give) people an active role in determining their profile that becomes visible when their face is recognized and looked up—just like the profile people are now making of themselves on social media like Facebook or LinkedIn. In this way, people would have more control over the ways in which they are present and visible in public spaces, comparable to the impression people make on others in real life, on the basis of their behavior, the way they dress, and the reputation they have.

Beside this, users should learn to deal with the effects Google Glass will have on their relations with other people—both when they wear the glasses and when they are being watched with it. It will not be very difficult to realize that other people might have all kinds of information available about you when they look at you. But

that awareness should also grow regarding all activities people have on the Internet. Google Glass integrates the public space of the Internet with the public spaces ‘in real life’. This implies a rearrangement of the boundaries between the public and the private, and the coming about of a new public space—as it happened before because of other media like the newspaper, the radio, and the television. Rather than merely resisting and opposing the negative aspects of this development, we will also need to develop new forms of citizenship and citizenship education. Codes of conduct and etiquette will have to develop, just like they exist already now in current public spaces.

This requires, thirdly, new policy-making activities. If the main question remains if we should or should not allow technologies like Google Glass to be introduced in our society, we lose the possibility to address the quality of its social implications. At the same time, a blind and unregulated introduction of this technology in society would throw away the possibility of critical reflection and governance. The central question for policy-making activities is how Google Glass can be embedded in society in good ways. Governance and regulation should focus on the quality of this embedding, rather than on the permission for it. This, inevitably, requires experimentation that makes it possible to find the right balance between openness for change and preservation of what we find valuable. We will need to ask questions like: which information should be disclosed and which not? Which aspects of ourselves belong to the private realm and which do not? And who determines that? Should people have the right to adapt the profile that is connected to their visual appearance? How can the design of Google Glass embody the central values in our society? And how can users be equipped optimally to integrate Google Glass in their daily lives in responsible ways?

The real information revolution has yet to begin. The boundaries between human beings and information technologies are blurring ever more rapidly. This requires a normative framework that gives up the idea that we need to control technologies from outside, on the basis of a set of pre-given criteria. Rather, we need to develop ever better ways to understand how information technologies affect us, and to get explicitly get involved in that process, by critically designing, embedding and using information technologies from the perspective of their mediating powers in human existence and our technological society.

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Towards an Online Bill of Rights

Sarah Oates

There are a lot of things happening in the online sphere, but effective self-governance is not one of them. This chapter asserts that there is a need for an online ‘Bill of Rights’ and reflects on how this might be made possible for netizens. Critical areas under discussion in the Onlife manifesto include concepts such as hyper-history, the lack of mediation in the online sphere, the erosion of privacy, a loss of context, distributed epistemic responsibility and even the right to digital euthanasia. A central theme in the Onlife Manifesto is the way the ‘virtual’ and ‘real’ are now woven together into an enmeshed life experience. Yet, the way in which individual rights are understood and asserted vis-à-vis the online sphere remains remarkably unarticulated. How can we continue as humans if a key part of our daily experience takes place overlapping into a sphere in which our rights are not articulated and—even more importantly—protected? Yet, even though we have arrived at what Ess has called in a discussion of the Onlife Manifesto a “critical moment” for policy intervention regarding our digital future, it would seem paradoxically that the online sphere itself lacks this capability to inspire or create policy to protect online citizens.

This chapter addresses the issue of online awareness of internet rights and policy on three levels. First, it reflects on why there is a lack of effective self-governance and policy direction in the online sphere. This calls for an explanation of how people perceive the norms of the online sphere—and how some utopian perceptions may cloud judgments about the increasingly asymmetric power relationships among online users, internet-service providers and the state. Secondly, the chapter mines some of key points raised in the Onlife project, as well as those identified in other calls for online rights, to suggest a list of six fundamental online rights to demand: the right to privacy, the right to own your own data, the right to a personal life, the right to avoid being forced offline for safety, the ability to switch off when needed as well as public spaces for civic debate online. Finally, this chapter discusses the difficult issue of translating crowd-sourced discussion into actual policy. It is not surprising that new technologies call for new governance, but as the internet has

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changed people, technology and their affordances simultaneously at great speed, the linked issues of self-awareness and self-governance in the online sphere are critical. How can we possibly unlock the potential of self-aware, online governance? The answer may lay in a greater effort by state Leviathans such as the European Commission. Overall, it is more useful to stop dreaming of cyber-utopias and start creating cyber-preserves of free exchange.

1 The Lingering Myth of Cyber-Utopianism

There is an astonishing gap between how people perceive internet ‘freedom’ and the realities of the digital sphere in the 21st century. The mistaken conviction that the internet is both unfettered by the norms of capitalism and can bring fundamental political change to the globe is not surprising. The internet was fostered by an unprecedented amount of social capital as well as has created unique ways for humans to interact. In the face of some grim realities about the way in which the digital world tends to reinforce the political and economic status quo, people still broadly ascribe open and disinterested roles to this communication sphere. It is possible that the internet still can provide the type of support to human capital that was present to a large degree in its early days within the research community. However, if we do not acknowledge that the digital world has become largely colonized by market and political forces, then it will be too late to preserve the essential social value of the internet. It is important to articulate what is unique and important about being human in the digital age—and how the central positive aspects can be preserved in the interests of the citizens, rather than for the demands of states or corporations. This led the Onlife initiative to attempt to articulate the key challenges to promote and protect citizen interests in the digital era.

An examination of various ‘manifestoes’ and other documents that articulate rights (and responsibilities) in the online sphere show a wide range of norms and ideals (see Table 1 for a sample list). However, a conviction that resonates through many of these declarations is the idea that the internet can fundamentally change how humans (and, by association, states) relate to one another. For example, Dyson et al.’s *Cyberspace and the American Dream* states that the “powers of mind are everywhere ascendant over the brute force of things” and implies that this is a shift in power away from traditional political institutions: “It also spells the death of the central institutional paradigm of modern life, the bureaucratic organization. (Governments, including the American government, are the last great redoubt of bureaucratic power on the face of the planet, and for them the coming change will be profound and probably traumatic.)” Even more striking is John Barlow’s *A Declaration of the Independence of Cyberspace* (1996), which identifies the internet as a completely new and different way of being human: “I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather.” The identification of the idea of ‘sovereignty’ is very useful, in that in many cases people are declaring that the norms of the internet are something new and different that transcend sovereignty and laws, some ‘hacker’ manifestoes going so far as to

Table 1 List of manifestoes and declarations relating to online sphere (alphabetical order, date of initial publication listed where available)

10 Internet Rights and Principles Internet Rights & Principles Coalition http://internetrighsandprinciples.org/site/wp-content/uploads/2011/09/irp3.jpg
A Crowd-sourced Declaration of Rights Source: Reddit Sub-Group http://www.reddit.com/r/fia/comments/vuj37/digital_bill_of_rights_1st_draft/
A Declaration of the Independence of Cyberspace Source: John Perry Barlow, 1996 https://projects.eff.org/~barlow/Declaration-Final.html
A Digital Citizen's Bill of Rights Source: Keep the Web Open http://keepthewebopen.com/digital-bill-of-rights
A Hacker Manifesto By Par McKenzie Wark Published 2004 by Harvard University Press http://subsol.c3.hu/subsol_2/contributors0/warktext.html
CATO Institute: The Libertarian Vision for Telecom and High-Technology By Adam D. Thierer and Clyde Wayne Crews Jr. http://www.cato.org/publications/techknowledge/libertarian-vision-telecom-hightechnology
Cyberspace and the American Dream: A Magna Carta for the Knowledge Age By Esther Dyson, George Gilder, George Keyworth and Alvin Toffler Future Insight Release 1.2, August 1994 http://www.pff.org/issues-pubs/futureinsights/fi1.2magnacarta.html
Declaration of Internet Freedom (1) http://www.internetdeclaration.org/
Don't Make Me Steal It Digital Media Consumption Manifesto http://www.dontmakemesteal.com/en/
Draft Code of Ethics for the Information Society Source: UNESCO http://unesdoc.unesco.org/images/0018/001871/187196e.pdf
Internet Manifesto How journalism works today. Seventeen declarations, 2009 http://www.internet-manifesto.org/
Manifesto for Agile Software Development http://agilemanifesto.org/
Principles on Freedom of Expression and Privacy By Global Network Initiative http://www.globalnetworkinitiative.org/principles/index.php
The Cluetrain Manifesto By Rick Levine, Christopher Locke, Doc Searls and David Weinberger, 1999 http://en.wikipedia.org/wiki/The_Cluetrain_Manifesto http://cluetrain.com/
THE:CYBER COM/MUNIST: MANIFESTO By Richard Barbrook, 2007 http://www.imaginaryfutures.net/2007/04/18/by-richard-barbrook/
The Euston Manifesto http://eustonmanifesto.org/the-euston-manifesto/

Table 1 (continued)

The Hacker Manifesto

Source: + + + The Mentor + + +

Written January 8, 1986

<http://www.mithral.com/~beberg/manifesto.html>

The Mozilla Manifesto 2012

<http://www.mozilla.org/about/manifesto.en.html>

Rights and Obligations

Source: Commission nationale de l'informatique et des libertés (CNIL)

<http://www.cnil.fr/english/the-cnil/rights-and-obligations/>

UN Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, Frank La Rue

http://www2.ohchr.org/english/bodies/hrcouncil/docs/17session/A.HRC.17.27_en.pdf

We the Web Kids

By Piotr Czerski

<http://www.theatlantic.com/technology/archive/2012/02/we-the-webkids/253382/>

Note: This list is meant to be a useful sample rather than encyclopaedic. It was compiled initially by Nicole Zwaaneveld for the Onlife Initiative

redefine a ‘hacker’ as someone who is reconfiguring not just code, but society itself. Overall, Barlow’s comment that “the challenge is as daunting as the opportunity is great” is compelling. The unique properties of the internet—the ability to transcend national borders, to create content with virtually no economic barriers, to communicate instantaneously, for many-to-many networking—indeed do create great opportunity. But what opportunity and for whom?

Cyber-utopism suggests that property and sovereignty are irrelevant because the power of networked communication will transcend these two pillars of modern Western society. The assumption in early cyber-utopism is that the opportunity will be for the citizens to have greater power. Yet, it was not clear how the online sphere would either appropriate that power or utilize it outside of traditional political institutions such as political parties, legislatures, military forces, traditional mass media, or indeed the framework of states themselves. Evidence suggests that state policy as well as national cultural norms divide and shape the internet into a reflection of individual countries. Thus, rather than transcending state boundaries, the internet can be seen to reinforce state boundaries and powers (Oates 2011). If the cyber-world is indeed an other, utopian sphere than it is precisely that—an alternative sphere that is devoid of the true institutions of power, a place for people to network and collaborate but ultimately only a landscape of ideas. The paradox is that if the online sphere remains ‘pure’ and above traditional political institutions, it also remains relatively powerless and irrelevant in modern political life. Thus, while the online sphere was perceived to be outside of mainstream society, it remained unfettered by the powerful interests of states and markets. As corporate interests began to emerge and quickly dominate the internet (Hindman 2008), there was little protection for a fragile eco-system that relied on norms of communal sharing in which capitalistic norms of profit were not present. Cyber-liberation arguments cited in various declarations and manifestoes

(see Table 1) cling to the idea that the online sphere is entitled to different rules and regulations, particularly in terms of distribution of copyrighted material. While they may have a point that the price of goods such as music, films and books remains disproportionately high now that the cost of distribution is relatively low, the argument that the internet is a zone excluded from regular legal oversight becomes increasingly weaker as the online and offline worlds continue to converge.

Interestingly, the *We the Web Kids* declaration by Piotr Czerski argues that there is no resonance to the idea of a ‘virtual’ world as young people of his generation seamlessly integrate information communication technologies into their daily lives. *We the Web Kids* makes this point in relation more to the social habits of the younger generation, but it’s a valid point throughout society as the web is “not something external to reality but a part of it: an invisible yet constantly present layer intertwined with the physical environment ... The Web is a process, happening continuously and continuously transforming before our eyes; with us and through us. Technologies appear and then dissolve in the peripheries, websites are built, they bloom and then pass away, but the Web continues, because we are the Web; we, communicating with one another in a way that comes naturally to us, more intense and more efficient than ever before in the history of mankind.” Thus, it is no longer useful to talk about the internet as though it were a separate universe. It is interwoven with human existence, with all the affordances and drawbacks this may bring. Czerski then tries to argue that as popular culture is part of this collective consciousness, it is unfair to claim copyright over things such as popular music television shows and movies. Yet, it is precisely *because* the online and ‘real’ words have now merged (as Czerski himself argued earlier in the piece) that gives weight to the argument that historic rules of ownership and copyright should apply to digital forms of creative output.

While acknowledging the origins of the internet as particularly collaborative and detached from economic or national concerns, it also must be recognized that the world has moved on. Yet, has the common conception about humanity’s relationship to the online sphere really moved on? The lingering conviction that the rules are different for online rather the ‘real’ spheres continues, as people continue to interact in ways online that they would never do in their daily, non-internet lives. On the one hand, this spawns stories about a Congressman sending sexually suggestive photos via social networking or the viral distribution of an expletive-laden email from a sorority member upset that her sisters weren’t friendly enough to male visitors at a social event.¹ On the other hand, it gives people a false sense of security when they engage in the online sphere. The problem is not so much people engaging in socially unappealing behaviour, being duped by email fraud or having their accounts hacked by online viruses so that their personal details can be stolen. More significantly, the assumption that the internet provides a safe, ‘other’ sphere blinds online users to their vulnerability to data aggregators (Solove 2004) working for corporations, security services or even simply criminals. Most internet users are unaware of the depth and breadth of personal information that is created via routine

¹ Former Congressman and failed New York City Mayoral Candidate Anthony Weiner and Rebecca Martinson of the Delta Gamma chapter at the University of Maryland.

online interactions—including but not limited to search, email on many platforms, uploading photographs, clicking on websites, buying products—that are harvested by companies and sometimes state security officials. We are leaving tracks all over the online world, the impact of which is discussed by other authors of the *Onlife Manifesto*. The point that is emphasized here, however, is that there is a considerable gap between what people perceive is being revealed about themselves and the massive, detailed and mostly permanent data trails that they leave behind.

2 Towards a European Onlife Bill of Rights?

European citizens live in a ‘fog of data’ in the digital age. On the one hand, the digital age augments life by giving individuals direct access to information and networks that previously were limited by physical or practical barriers. On the other hand, as Broadbent and Lobet-Maris write in their chapter, the advent of the digital age has eroded barriers between individual and self in new and challenging ways. In practical terms, this raises concerns about data and identity theft. In more philosophical terms, this means significant challenges for people in negotiating a balance between different aspects of what it means to be human. In particular, this raises problems in terms of preserving different levels of privacy as the digital presence merges various identities—including student, teacher, worker, lover, child, sibling, parent, etc.—into a single visible entity. As Broadbent and Lobet-Maris write, “The individual is always visible and transparent, open to the view of all.” This creates enormous stress on individuals, in particular due to the lack of “unclear social norms and regulations.”

But does it have to be this way? Without getting bogged down in a philosophical discussion of the power of technology versus the will of Man, it is possible to set out tenets that can help individuals to negotiate the digital landscape. In some ways, these can parallel how society negotiates issues surrounding information in society in general. While the digital age brings challenges in new forms, the questions for humankind are essentially the same when we discuss defining the limits between the personal and the public. The problem is that these issues are not being discussed in a meaningful way. People are heavily engaged in commerce and entertainment in the online sphere, but there is a dearth of self-aware political discussion and mobilization about the very communication environment that dominates the 21st century.

What we are left with is a lack of online cultural norms that can lead individuals astray if they continue to perceive the online sphere as free from norms—or even laws—that often have surprisingly harsh consequences. The way in which a false sense of security can lead people astray in a social sense is primarily anecdotal. One of the highest profile cases was that of former U.S. Representative Anthony Weiner, who resigned his seat in 2011 after admitting to sending a sexually suggestive picture of himself via social networking.² Indeed, he even failed to learn from this

² For background, see <http://abcnews.go.com/Politics/rep-anthony-weiner-picture/story?id=13774605>, (last accessed September 28, 2013) and <http://www.myfoxchicago.com/story/22919644/anthony-wein->

experience and admitted to more of this behavior during his unsuccessful bid to run on the Democratic ticket for Mayor of New York City in 2013. While this incident underlines the ability of the internet to identify inappropriate behavior by public figures, it also shows how even a U.S. congressman—arguably a fairly intelligent and media savvy individual—would still cling to the idea that the internet was somehow exempt from surveillance, taste or appropriate behaviour. The troubling case of Weiner aside, U.S. politicians in particular have been found that any traditional tolerance of ‘offline’ behaviour has disappeared, with the online Drudge Report responsible for breaking the Monica Lewinsky/President Clinton scandal, the damage to Senator Trent Lott’s career when a tape of his praise of a racist politician was broadcast online, and, more recently the release of a video tape during the 2012 U.S. Presidential elections in which Republican candidate Mitt Romney dismissed 47% of Americans as “dependent on the government” and failing to “take personal responsibility and care for their lives.”³

If knowledgeable politicians are falling victim to the open nature of communication online, what about average citizens? There is rising evidence that online profiles are used to judge people, not merely socially but by key gatekeepers such as employers or university admission staff. A survey of more than 2,000 hiring managers and human resource professionals in the United States in 2012 found that 37% of companies used social networking sites to research job candidates and another 11% said they planned to start the practice.⁴ About a third of the companies who researched candidates on social media found that the information caused them not to hire a candidate, including when they found provocative or inappropriate photos; information about the job candidate drinking or using drugs; or evidence that the candidate had poor communication skills. By the same token, almost as many managers (29%) reported that they found something positive about job candidates in their social-media records (personality, background, professional image, good communication skills, good range of interests, creativity, positive comments from others). Interestingly, 15% of the companies interviewed banned the practice of using social media to research job candidates, showing that there is a deep division in perceptions of online privacy even amongst U.S. employment managers.

Although universities in the United States are more likely to use social media in an attempt to attract students rather than to vet applicants to their programs, it is a two-way street, according to a survey by Kaplan Test Prep in 2012.⁵ A survey

er-caught-in-another-sex-scandal-wife-sticks-by-him (last accessed September 28, 2013).

³ See text at <https://historymusings.wordpress.com/2012/09/19/full-text-campaign-buzz-september-19-2012-mitt-romneys-47-percent-victim-voters-speech-at-may-private-fundraiser-mother-jones-video-transcript/> (last accessed September 28, 2013).

⁴ The survey was conducted online with the United States by Harris Interactive on behalf of CareerBuilder (careerbuilder.com) with 2,303 hiring managers and human resource professionals between February 9 and March 2, 2012. Report online at <http://www.careerbuilder.com/share/aboutus/pressreleasesdetail.aspx?id=pr691&sd=4%2F18%2F2012&ed=4%2F18%2F2099> (last accessed September 28, 2013).

⁵ For the 2012 survey, 350 admissions officers from the nation’s top 500 colleges and universities—as compiled from U.S. News & World Report and Barron’s—were polled by telephone between

of college admissions officers found that schools are “increasingly discovering information on Facebook and Google that negatively impact applicants’ acceptance chances.” While the survey found only slight growth in the percentage of admissions officers who checked Google (27%) and Facebook (26%), the admissions officers were getting much better at finding bad things: The percentage of admissions officers who said they discovered something that “negatively impacted” an applicant’s chances of getting into the school nearly tripled from 12% in 2011 to 35% in 2012. The admissions officers were unhappy with evidence of plagiarism, vulgarities in blogs, alcohol consumption in photos, things that made them “wonder” and “illegal activities,” according to the study. Indeed the comments about the finding from a Kaplan official reflect many of the concerns raised in the Onlife Manifesto: “Additionally, we’re seeing a growing cultural ubiquity in social media use, plus a generation that’s grown up with a very fluid sense of privacy norms. In the face of all these trends, the rise in discovery of digital dirty laundry is inevitable,” said Jeff Olson, Vice President of Data Science, Kaplan Test Prep. “With regard to college admissions, the traditional application—the essays, the letters of recommendation—represent the polished version of an applicant, while often what’s found online is a rawer version of that applicant. Schools are philosophically divided on whether an applicant’s digital trail is fair game, and the majority of admissions officers do not look beyond the submitted application, but our advice to students is to think first, Tweet later.” Echoing the problem of a lack of norms for employers, Kaplan’s survey found that only 15% of the college admissions offices surveyed even had rules regarding the checking of applicants’ social networking content.

What emerges from these examples is a lack of consistent practices as to whether the internet is considered a public or private space by employers and admissions officers in the United States. Coupled with the confusion by individuals—and the continuing list of people who are reported in the mass media as ‘caught out’ via internet content despite significant evidence that nothing can be considered private in social media. While these examples are from the United States, the issues are global because countries all over the world lack strong laws or even norms in these areas. As a result, we need to consider how to articulate a set of norms and values for a new communication era—and these norms should be articulated rather than left to chance. It isn’t useful or fair to leave negotiating the evolving digital landscape to the individual. In part, this is structural as corporations and governments have, so far, been more effective at harvesting information than protecting the rights of individuals. This is unsurprising given that the logic of both capitalism and state power dictate that the needs of corporations or the state would outweigh the needs of individual consumers or citizens. In addition—and this is a more subtle and less discussed point—individuals are vulnerable to a range of factors in the digital age that are linked to the very affordances of the digital world that people cherish and embrace. Broadbent and Lobet-Maris define this (in part)

July and September 2012. See <http://press.kaptest.com/press-releases/kaplan-test-prep-survey-finds-that-college-admissions-officers-discovery-of-online-material-damaging-to-applicants-nearly-triples-in-a-year>.

within the frame of attention. Attention has become ‘monetized’ so that we are constantly playing the dual role as attention-consumer and attention-attractor in order to maintain or promote our place in life. Yet, there is more to being human in the digital age than a sort of meter that monitors the amount of attention we can attract in a crowded digital sphere. We should not be reduced to our online rating, as measured through our number of Facebook friends, Twitter followers, position in the Googlearchy, etc. Individuals need to recognize that they should have agency and choice in the online sphere and that they should have structures in place to support this agency and choice.

3 A Digital ‘Bill of Rights’

How can we articulate these thoughts into principles for policy? The following ideas were developed during the Onlife meetings from discussions at the first workshops. Much of the work of the Onlife Manifesto is dedicated to identifying core issues; while certainly not encyclopedic the six points below are an attempt to identify the core issues. In addition, they resonate with a range of declarations developed regarding rights and the online sphere as listed in Table 1.

1. Everyone has the right to privacy.

When attention is monetized through the constant harvesting of online personal activity and data, we lose privacy (Cohen 2012; Solove 2004). When states chose to monitor citizens in the online sphere, we lose privacy. When technology fails to keep its promise of anonymity, we lose privacy (Ohm 2009). The ongoing argument to support the harvesting of personal data has been that it is a contract between the internet-service provider and the individual, i.e. if you use Google or Facebook, you are allowing your data to be tracked in order to use the service. States use a variety of arguments to support harvesting online information (either openly or covertly), ranging from a need to better respond to citizens to anti-terrorism efforts. There are two fundamental problems with this ‘contract.’ First, there is evidence that ISPs as well as governments have not been clear with consumers or citizens about the way in which the data is tracked and used, creating a digital profile for users. It might be more useful to think of this as a sort of digital ‘tattoo’ or what Solove (2004) called a “digital dossier” because of its permanence. Secondly, there is a widespread lack of individual awareness of how the private becomes permanently public in the digital age, which is reflected in the way in which people post information, images, video, etc. that are damaging to themselves and others. In this way, individuals create permanent profiles of themselves that they cannot delete (or refute).

There is a slightly more compelling argument that the state should be able to react to obvious threats to state security that are visible in the online sphere. However, as a U.S. Supreme Court justice once said, freedom of speech should only end when you stand up and yell ‘fire’ in a crowded theatre, i.e. you should only lose the right to free discourse if you are creating a clear and present dan-

ger.⁶ There should be a defined limit or test for what is state security risk and what is acceptable radicalized discourse in the online sphere. While this is a part of a wider debate about the state, the public and information in the post 9/11 world, the harvesting of online data so radically realigns the power relationship between the harvester and the subjects that this debate becomes much more pressing and urgent. It also would appear that governments lack the self-restraint not to monitor a wide swathe of citizens in the name of national security. The revelation in June 2013 that the National Security Agency in the United States was tracking huge tranches of mobile phone records drew attention and debate from Americans about government surveillance, but the more critical issue of the potential to track citizen behavior via the online sphere at a far more granular level still does not seem to be understood by citizens.

2. Individuals own their own data.

This is a bold statement, in that the business model of many ISPs is based on the harvesting and sale of data to advertisers. This is not to suggest that ISPs could be stopped from collecting individual data, but the idea of the right to one's data should be considerably strengthened. While many people easily recognize that information that they enter into a computer (such as names, dates of birth, bank account numbers) is data that needs to be protected, there is far less awareness of the more subtle and personalized data patterns, essentially digital fingerprints, that are created by individuals in their daily internet interactions (particularly search behaviour). There can be two views here that are compatible within the idea that individuals own their own data and the public own public data. In a cooperative move with ISPs, the data can be shared. For example, Google makes public a great deal of its aggregate data via Google Analytics in an attempt to show the value of search data in informing economic, social and political life. However, Google does not make its data archive linked to individuals public unless forced to do so by national laws—and as shown by its withdrawal from China, Google will resist this where possible. (However, the NSA scandal suggests that Google may be compelled to share data on individuals more frequently than they are able to report.) In a more pro-active approach, society can choose to block or severely limit the way in which individuals are monitored by ISPs. European states have moved in this direction recently by requiring ISPs to inform users about cookies and having users 'opt in' instead of 'opt out'. The notion of informed consent imposed by law is an important and useful direction.

3. Everyone has a right to a personal life.

This is linked to the issue of privacy as discussed above, but it is somewhat different. No one should have to friend on line a teacher, student, co-worker, client, etc. There should be clear delineation between what is an online business/education tool and what is a social/personal tool. Part of this is an issue of ISP design. Facebook, created by U.S. college students, is based on the American ideal of networking in which personal and professional relationships are encouraged to merge. However, as has so often been the case with online interfaces, the sheer scale and scope of Facebook has intensified this relationship in unhelp-

⁶ See the U.S. Supreme Court decision in *Scheck v. United States*, 1919.

ful ways (coupled with the toxic need for attention that drives many people to compulsively post minute information about their personal lives on line). It has created the ‘perfect storm’ to erode the boundaries between the personal and professional.

4. No one should have to switch off completely to protect himself or herself. Here the argument (particularly from the older generation) is that one can simply opt out of social networking or the online sphere in general. This is almost impossible for much of the population. For example, students clearly use social networking to communicate with their peers at school and manage relationships. The level of enthusiasm for it varies, but it is not really optional. A college student who is not on Facebook (or the current dominant social network in his or her environment) would be socially and academically isolated, missing the communication and even links to critical information for study. Broadbent and Lobet-Maris also are correct to point out that a new digital divide emerges when management can remain online throughout a working day and workers cannot. This is the new type of digital divide that warrants attention and concern. The issue of the timing and control of access should be considered in more depth.
5. Switching off sometimes should be encouraged—and cultivated. As noted in meetings of the Onlife project, the internet has become a sort of external brain for a lot of people. It has the ability to stimulate and delight through access to information and people, supporting us in our quest to be better informed as well as through enriching relationships. However, this is where the point made about attention by Broadbent and Lobet-Maris is so important. We need to cultivate the ability to pay attention and concentrate, as it is becoming a lost art. This type of focused attention is still necessary, in particular for learning and close relationships. Perhaps it is not so much about ‘switching off’ as withdrawing from the public to private, as discussed in earlier points.
6. There should be ‘third spaces’ that are owned and regulated by the European public. Again, here we have an issue in which the U.S. model of communication has come to dominate in Europe and it does not really fit. In particular, Facebook operates under the U.S. libertarian system, in which there is little distinction among the commercial, the private and the state in terms of information production and dissemination. Americans reject the notion of the state as the instrument of social and political change; rather, they view the state as the handmaiden of the wishes of the public. While there is a lot of evidence that the U.S. state is bigger, more powerful and more redistributive than the common American believes it to be, it also means that Americans are quite comfortable with the fusion of commercial and political power in the information sphere. The same is not true of Europeans. European countries have created either public or state broadcasting systems, as well as tend to have a greater emphasis on the state’s role in inculcating public debate. This means that U.S.-designed internet interfaces and norms of data openness are not appropriate. It suggests that European states and the European Union itself need to be more pro-active in creating a public ‘agora’ in which citizens can debate and discuss political ideas in a less polarized way, as well as in a way that is more supportive of European democracy at the national or Union level.

Here, one could reflect on some evidence surrounding political debate, parties and elections in the United States. As Richard Davis (2009) points out in his study of U.S. political blogs, influential blogs in the United States are partisan. They reflect the divide between Democrats and Republican, who are typically more at odds over social values than economic issues. Despite this polarity—or perhaps because of it—blogs are a particularly vibrant part of the U.S. news discussion, often quoted or breaking political stories in their own right. Online news sources have become popular, not just as elite influencers, but as news outlets themselves. Thus, the United States has more developed, if at times polarized, online political discourse than European countries such as the United Kingdom. The question remains whether this is one of culture or—as Scott Wright would argue—one of design. Wright, who has studied the effect of different online formats on the nature of discussion, argues that online deliberation can be ‘engineered’ by particular web interfaces (2012). Left to chance or merely the market, these deliberative spaces do not arise. This is in part because political interaction and discussion form only a very small part of what people do on line. However, Wright’s research has found that when given opportunity and motivation, people are ready and willing to discuss political issues and mobilize on line in the United Kingdom.

The idea of an engineered online ‘agora’ is particularly important during a period of crisis. My own research and that of others has found that online discussion becomes more intense—and much more closely linked to offline manifestations ranging from elections to protests—in times of political crisis (Khamis and Vaughn 2012; Lewiński and Mohammed 2012; Oates 2013). As the Euro crisis comes to a head in Europe, where is the common space for Europeans—as opposed to citizens of individual nations—to discuss and debate these issues in a rational, informed manner? At an even more fundamental level, where is the common space in which authoritative information about debt, taxation, fairness, rules and consequences can be exchanged among a European public? The current coverage of the Euro crisis is, unsurprisingly, framed through the lens of national media. As a result, the public are woefully uninformed—and even misinformed—about the information and issues at stake. As in any disputed, nationalistic information sphere (reflect on audience issues in Northern Ireland or the former Yugoslavia), there is no real accepted reality. As a result, it is enormously difficult to discuss the issue in a ‘European’ way. The internet could provide such common space, yet does not at this time.

4 From Creative Commons to Civilized Commons

Social scientists often think in opposing dualities—voters versus non-voters, communists versus capitalists, citizens versus elites, war versus peace. We present a worldview in this way in order to stimulate debate, although within various

epistemic communities the more useful debates often deal with the shades of gray. For example, it is not as if there are vast crowds of citizens wandering about under the whip hand of a circle of elite leaders (although Left publications might put forth this case). Rather, as members of a society, there are times when we contribute and times when we simply consume, not really fulfilling the Leninist idea of ‘from each according to his abilities, to each according to his needs’ but rather in the less economical and less elegant way of taking on shifting roles of responsibilities and benefits. Thus, change is better understood as evolution rather than revolution. However, there has been a lot of talk about internet ‘revolutions’, whether it is the ‘Twitter Revolution’ in Iran in 2009 or the ‘Facebook Revolution’ in Egypt in 2011. While many of the manifestoes discussed above (especially Barlow’s) describe the internet in revolutionary terms vis-à-vis power redistribution from existing elites to the masses, the twin forces of national power and commercial online dominance make that unlikely.

Yet, there are enough elements of the initial forces that shaped the internet to make it a social tool that is unlike anything that has come before. An overlooked element of the internet is speed. Its ability to communicate instantly among many without national or corporate frames is indeed revolutionary. In this particular way, the internet rebalances power between elites and masses. So far, this dynamic has been more about challenging political elites than replacing them, as the experience in Egypt suggests. While states are learning to harvest the online world to better understand and/or control their citizens, traditional political institutions are not well designed to take full advantage of the social capital offered by the online sphere. Rather, it may ultimately emerge that distributed power networks become more authoritative—and hopefully more effective—at spreading democracy than established power institutions. The articulation of the rights (and responsibilities) of online citizens is a first step in preserving the potential of the online sphere to improve the condition of Man.

There is an element to the Onlife Manifesto that is revolutionary and this is implicit in both the manifesto itself and the recent reflection from Charles Ess for the Onlife initiative: Governments cannot be passive in the face of evolving technology. Ess, in his chapter, usefully points to the historical evidence that businesses do not automatically safeguard consumers when they introduce new technology (his example of the exploding steam engines was particularly evocative). While this is regrettable, it is also understandable under the logic of the market. No single company could simultaneously bear the cost of innovation and public safety, particularly with the introduction of new technology. The problem is that the internet was supposed to be different; it was supposed to be a post-modern collaborative effort that was above the demands of both sovereignty and capitalism. That may have been true in the initial stages, but for the past decade there has been ample evidence that the internet is the prime locus for business (Google, Facebook, etc.) and national controls (as evidenced by Syria switching off the internet in late 2012 or the broader issue of how security services in nations around the globe mine the internet to monitor citizens). The notion that the internet does not have profound economic and politi-

cal power in the traditional sense is absurd, yet the clear vision of this is blurred by a hazy memory of ‘cyber-utopia’ as embraced by Tim Berners-Lee et al.⁷

The problem is that the debate about the benefits and drawbacks (a crude duality) of the online sphere has not followed lessons of history, perhaps because there has been too much comparison of the internet to the traditional mass media. While the internet shares many of the same issues as the traditional media (such as journalistic ethics, news values, serving as propaganda in times of war and the problem of ‘dumbing down’ the news), the online sphere offers many additional, distinctive opportunities and threats to society. These are articulated in the Onlife Manifesto, but the next step is to express more forcefully what we mean in all of this: The state needs to play a role. What role, given that we have established that this is not about relatively straightforward issues such as access or protecting children (although those are specific concerns within a much broader discussion)? The Onlife Manifesto shows that there is a need for the choices and tradeoffs in the online sphere to be made more evident. That is to say, people need not just connection to the internet or even engagement in the online sphere; they need informed engagement on a relatively level playing field that has been engineered to prioritize the rights of citizens over the needs of elites.

On the one hand, this means a focus on more nuanced and useful information for people of all generations and all socio-economic categories in Europe about both the benefits and trade-offs in engaging in the online sphere. Language about risks is not useful, particularly when there is no way for individuals to really understand, much less negotiate, risks such as loss of privacy and identity. At the same time, governments need to establish guidelines for internet-service providers such as Google, Facebook, Twitter, etc. so that people who chose to use these services are aware of data-mining the surrendering of ownership of their images and words. Overall, the risks and responsibilities need to be redistributed from lying primarily with the citizen-user and to be much more substantially shared by internet-service providers. For this exercise, we are discussing the European Union, but in many ways this is the role of national governments as well. So out of all this comes again this idea of the pairing of rights and responsibilities, with perhaps a parallel to motor-ing privileges. Just as citizens are responsible for safe driving, governments are responsible for eliminating hazards from the motorways. Citizens have the right to participate in the online sphere, but they have the responsibility to learn how to navigate it to protect themselves (and others). At the same time, governments have the responsibility to protect citizens against dangerous technology, such as that which allows excessive data mining and loss of privacy rights. If governments can

⁷ Ironically, the development of key points of the internet—such as packet-switching, TCP/IP, the concept of Email, the World Wide Web and web browsers—would never have been developed without the early, open and collaborative nature of the internet that paralleled the heavy involvement of academics and did not follow the laws of market capitalism. However, commerce and nation-states have long since expropriated this free-ware capital, a move that is perhaps so painful to early web developers that it seems under acknowledged. Certainly, there are elements of the online sphere that both spread and foster values of disinterested participation, but they are now the exception rather than the rule.

foster the creative spark and the potential that brought the internet so far into our daily lives at such a rapid pace, then it can help preserve (rather than destroy) the most promising way to unlock human potential on our planet. Manifestoes, ranging from the Magna Carta to the Declaration of the Independence to the Communist Manifesto, delineate fundamental shifts in the relationship between elites and rulers. We are at a crossroads in terms of the power balance between citizens and elites/powerless and powerful in the digital world; the Onlife Initiative seeks to make visible these issues and forces.

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On Tolerance and Fictitious Publics

May Thorseth

1 Introduction

One particular incidence makes up the main background for the argument to be presented below. On July 22 in 2011 Norway faced a tragedy of enormous dimensions. The right winged terrorist Anders Behring Breivik bombed the governmental building in Oslo, the capitol of Norway, and later the same day he cold-bloodedly killed 77 youth of the Norwegian Labour party who attended a summer camp on a small island outside Oslo. In the aftermath it was much debated in the medias how he could possibly be able to carry out this misdeed. We shall leave out all practical aspects here and rather concentrate on one particular moral issue, having to do with toleration. More specifically I shall frame this as a question whether we could possibly tolerate the political opinion upon which this action was based.

Breivik's opinions had been presented in a Manifesto online long before July 22. The author here laid out a conspiracy theory about the threat from inferior races against Arian and European people, and seriously discusses how to solve this problem. Much of his speech is right wing propaganda, presented in a quasi-dialogic form where Breivik interviews himself. Part of the story is his claim that he represents an Heraldic Order lead by himself. Without getting into further details I shall describe this Manifesto as employing fictitious use of reason. One of the issues in the trial was whether there had ever been others but the author himself being a member of this Order. Few believe that there are. For the sake of argument we shall assume that the whole story was fictional—there had never been any real public.

The main issue is then whether it makes a difference if the public is fictitious, as in Breivik's case, or rather a real public in the sense of consisting of a certain amount of people. I believe it is not. The most important criterion of the fictitious character is not the amount of participants, but rather the use of reason involved. Thus, the difference between the real and the fictitious is procedurally defined.

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2 New Publics and the Old Problem of the Public?— Digital Transition

Due to the digital transition of communication medias of our time we can see how Dewey's problem of the public is going through a transition (Dewey 1927). Briefly, the problem of the public has to do with a political complexity that calls for improvement of the methods and conditions of debate, discussion and persuasion. Dewey recognised in particular a need for a better-informed public and also for legislators and policy makers to become better informed of the experiences of the public. On Dewey's account there is a risk that people do not to a sufficient degree acquire an adequate view of the public. As an example, both electors and voters lack the methods and conditions of debate to become sufficiently well informed. Raising this problem within the context of our new medias adds still another dimension to this old problem: everyone with access to the Internet is in principle able both to access all the information people may wish for, but on the other hand there is also an accelerating problem of filtering, as discussed by e.g. Cass Sunstein (2001).

Rather than conceiving of the problem of the public as one about having the most adequate methods and conditions for debate at hand the new problem is somehow the reverse: due to digital transition and the methods available today it would in principle have been possible to inform the public better. Truly, e-democracy and better communication between e.g. electors and voters have been tremendously facilitated. But the problem of the public still seems to have survived due to the same methods, despite their ability to facilitate information flows. Because people in liberal, democratic societies have freedom of speech and expression along with other democratic goods there is a possibility for everyone of accessing only the information one takes an interest in. Due to the information technologies of today it is even possible to publish one's own *Daily Me*, Sunstein's spooky vision of a fragmented society devoid of social glue (Sunstein, 2001). The possibility of everyone publishing their own tailor-made newspapers online is the nightmare Sunstein fears. Despite the methods at hand he envisages a society devoid of citizens taking upon societal duties towards their fellow citizens. Below I shall argue that Breivik's Manifesto is an example of a Sunsteinian *Daily Me*.

3 New Medias and Blurring of Private—Public

Since long the distinction between private and public has existed in the literature, in particular in debates between liberals and communitarians on multi-ethnic topics, e.g. in the debate on group rights (see e.g. Rawl 1985; Taylor 1994, and numerous other publications). One purpose of the divide has been to clarify questions of legitimate intervention in the private sphere. On a liberal account the private sphere has been identified with comprehensive goods such as religion and world outlook (Rawls), whereas the political domain is seen as possible to separate from the

private, domestic life and keep it neutral in the sense of treating everyone equally. Susan Moller Okin has argued that this liberal separation between the spheres is insufficient to avoid suppression in the private, domestic areas of life. She has described this as a tension between multiculturalism and feminism (Okin 1999). Others, like Taylor, have discussed the problem of multiculturalism and recognition, i.e. of how to recognize everyone equally while at the same time respecting differences (Taylor 1994). On the one hand everyone should be given an equal right to exercise comprehensive goods. However, if a member of e.g. an ethnic or religious group disapproves of the comprehensive goods of that particular group she could be deprived of the same right that is admitted at the political level. Thus, we could no longer speak of equal recognition. The contradictory result would be that equal recognition at the political level is internally linked to disrespect of the individual group members. Thus, we can see how the public-private divide raises serious problems in the multicultural debate on toleration. Should conflicts in the private domain be exempted from public scrutiny in cases where individual are being deprived of their basic legal rights? What about cases of indoctrination, censorship and the like? In the context of this paper it is particularly the rights and duties connected with being well informed that is at stake. My bold claim is that the problem of the public prevails as long as citizens are deprived of the possibility of being well informed. A key question is of course whether a corresponding duty exists, i.e. whether we could reasonably speak of a responsibility to be informed about opinions diverging from one's own.

At his point we need to make a distinction between two understandings of 'well informed'. One relates to knowledge of e.g. others' opinions. The other concerns capability of reflection, of making well informed judgments. It goes without saying that these are related. For our context it is, however, the latter understanding we shall keep in focus. The main reason why is because it is possible to be well informed of the "facts" of a case without necessarily knowing better in the sense of judging better. The point of being better informed within deliberative democracy debates is about the latter (see e.g. Dryzek 2000).

Within the digital environments of today it is a trivial fact that most people are well informed simply because they have *more* information about a more extended range of issues compared to pre-digital times. But this epistemic point also contains a further question whether people thereby also have more *knowledge*. Rather than dwelling with this epistemic issue my point is rather a moral one: does more information indicate better knowledge? The case of Breivik rather proves the opposite. In his Manifesto he proves that he has a lot of information about historical "facts" and also of other viewpoints. The "dialogical" reflection carried out in the Manifesto is, however, no dialogue between himself and his opponents. What is obviously lacking is a capability of incorporating opposing and diverging opinions in developing his own ideology put forth in his document. Still, most people would agree that he has a lot of information, and even knowledge of many historical events, while he is still insisting on an interpretation that is at odds with dominant liberal and democratic viewpoints. In describing the state of the arts, i.e. the threat from Muslims and others who do not fit into his race hygienic public, he describes a

reality that strongly diverges from other people's descriptions. The fact that the surrounding society strongly disapproves of his understanding seems to have no impact on a possible revision on his part. This is a serious flaw because it undermines a necessary criterion of a real public, namely recognition of the possibility of being mistaken. Unless a connection is established to other viewpoints there is no genuine public reasoning. This gives us a criterion for distinguishing between real and fictitious publics. Breivik's alleged public belongs to the latter.

The well-established private-public distinction is no longer adequate in dealing with cases like Breivik's. As Sunstein correctly claims there exists a threat to public reason due to filtering, the point being that opinions that ought to be brought into the public remain concealed to the public, in the private domain of the comprehensive. Even if we accepted Rawls' distinction between the political and the comprehensive, or public and private, this would not help much in cases like this one. Rather, we need to question whether to approve of opinions presented in the public unless they convey publicizable opinions. My claim here is that we should not.

What I want to establish is a criterion for the possibility of misconstrued conceptions of public reasoning, and to confuse real with fictitious public reasoning. What seems to be lacking in Breivik's Manifesto is the viewpoint of opponents, and to meet with the claim on universalizability. Below we shall have a brief look at Kant's 'reflective judgments'.

4 Reflective Judgment

Before discussing further our main question—whether we should respect equally real and fictitious public reasoning—we shall have a closer look at Kant's concept of reflective judgment. I shall argue that the willingness to apply this capability is decisive for qualifying as real public reasoning, and thus worthy of being tolerated.

4.1 *The Universal of Reflective Judgment*¹

In Kant's conceptual scheme judgments are of two different kinds: either they are determinant, as when something particular is subsumed under universal laws, or, by contrast, "[i]f only the particular is given and the universal has to be found for it, then the judgment is simply *reflective*" (Kant 1952, Introduction IV:18). The purpose of reflective judgment is not to determine anything; rather, it is to give itself a law. Hence, validity is gained through reflection of something particular as opposed to subsuming something under universal laws. This is partly because judgment, which is the topic of investigation in his *Third Critique*, is about empirical contingencies and not about universal laws of nature or final ends of freedom.

¹ Parts of this paragraph was first developed in Thorseth (2008).

Judgment is one among three cognitive faculties, the other two being theoretical and speculative reason (along with sensibility and understanding) in the *First Critique*, and pure practical reason in the *Second Critique*. Kant's own focal point in his treatment of judgment is taste and the sublime, and applies first and foremost to art, as distinguished from nature (pure reason) and freedom (practical reason). As such, judgment primarily concerns the aesthetic domain of feelings of pleasure and displeasure, as opposed to the faculties of cognition and desire. As such, pleasure and displeasure can never make claims to objective necessity or *a priori* validity:

As with all empirical judgments, [pleasure or displeasure] is, consequently, unable to announce objective necessity or lay claim to *a priori* validity. ... [J]udgement of taste in fact only lays claim ... to be valid for every one. ... [O]ne who feels pleasure in simple reflection on the form of an object ... rightly lays claim to the agreement of everyone, although this judgment is empirical²

The ground of this pleasure is found in the universal, even if subjective, condition of reflective judgment, according to Kant. One essential point is to be noted here: the judgment receives its validity from the anticipated agreement with every judging person.

The validity of judgments depends on the judging, and it is not valid for those who do not judge. Hanna Arendt puts this point forth, in emphasising that the claim to validity presupposes communication between self and others. Hence, a judgment's claim to validity can never extend further than the public realm of those who are members of it (Arendt 1968, p. 221). There are in particular two aspects concerning validity that should be noted here. One concerns the relation between the particular and the universal, whereas the other has to do with the public aspect of judgment. Any particular judgment is based in contingent and finite appeals that nevertheless may transcend the subjective conditions of the particular judgment. The potential for transcending the purely subjective condition is due to the communicative aspect of all judgments. Hence, reflective judgment is deeply founded in communication. For Kant himself reflective judgment is supposed to lay outside the political domain, whereas both Arendt and later Sheila Benhabib rightfully have argued that it should be extended to the faculties of politics and morality as well (Arendt 1968; Benhabib 1992).

To answer this challenge, we shall first have a look at Kant's own account. He introduces the concept *sensus communis*, which is a public sense and a critical faculty that takes account of the mode of representation in everyone else. This faculty is the power to make judgments for the purpose of public appeal, thereby avoiding the illusion that private and personal conditions are taken for objective:

This is accomplished by weighing the judgment ... with the ... possible judgments of others, and by putting ourselves in the position of every one else ... [abstracting] ... from the limitations, which contingently affect our own estimate (Kant 1952, § 40, p. 294).

² Kant (1952: VII, p. 32). Since I first wrote this paper I have become aware that the translation of 'erweiterte Denkungsart' as 'enlarged mentality' or 'enlarged thinking' might be unfortunate. Other translators (Pluhar and Guyer) instead apply the term 'broadened way of thinking', which seems to better capture the meaning of the German term.

This way of thinking in the place of everyone else is called enlarged thinking. The power of judgment rests on a potential agreement with others. Judgments derive their validity from this potential agreement. According to Arendt:

This means, on the one hand, that such judgment must liberate itself from the “subjective private conditions”, that is, from the idiosyncrasies which naturally determine the outlook of each individual in his privacy and are legitimate as long as they are only privately held opinions, but are not fit to enter the market place, and lack all validity in the public realm (Arendt 1968, p. 220).

Sensus communis may thus be compared to the procedure of universalization in the categorical imperative, which in a similar way appeals to a public sense through universalization.

The potential agreement with others along with the liberation from private subjective conditions is what enables intersubjective validity of judgments. The kind of communication at work in judgment is a different kind of relation between the particular and the universal. In Sheila Benhabib’s words: “Judgment is not the faculty of subsuming a particular under a universal but the faculty of contextualizing the universal such that it comes to bear upon the particular” (Benhabib 1992, p. 132). I understand the “contextualizing of the universal” that Benhabib talks about as a claim to demonstrate how the universal appeal works in each particular context. As an example, a claim directed towards the authorities to make exceptions for some particular group of citizens may contextualise the universal by demonstrating how the particular case relates to other similar cases. Otherwise, contextualising the universal might appeal to others’ imagination of putting themselves in the particular circumstances of others. Both Arendt and Benhabib agree on Kant’s account of reflective judgment as far as the validity procedure for particular judgments are concerned. However, the kind of intersubjective validity that is derived should not only be restricted to the aesthetic domain of taste, as we have seen. The main reason why is due to the intersubjective appeal in all judgment that anticipates communication with others. Even if a person is alone in making up her mind, there is an anticipated communication with others with whom one must finally come to some agreement (Arendt 1968, p. 220).

The extension of reflective judgment to the public domain of reason in general is vital to the argument of this paper. One reason why is because legitimating of opinions in the public domain requires approval of other participants in the discourses and disputes going on. This might be interpreted either as agreement that an opinion is reasonable, or as actual agreement with some other’s opinion. The main point here is the kind of approval contained in Habermas’ theory that public opinion is moving towards increasingly stronger validity of public opinion rather than claiming actual agreement of opinions (Habermas 1990). Validity is then conceived as an on-going legitimating process whose ultimate arbiter is public reason itself.

4.2 *Reflective Judgment and Real Public Reasoning*

A key question is whether the claim “to think from the standpoint of everyone else” in Kant’s *Third Critique* should be interpreted as making an appeal to context, which is assumed in Arendt’s extension of reflective judgment to the public faculty. Validity in the Kantian model is grounded in the universal communicability of particular judgments. Thus, it might be argued that the emphasis is still on universality rather than particularity conceived as context. Universality is, however, based in a public sense that is possible to share with others only to the extent that it is communicable and may thus gain universal validity. Thus, I think it makes good sense to interpret particularity in Kant’s account of judgments as an appeal to the context of particular judgments, on topics concerning reason just as well as judgment. In other words, I see no good reason why reflective judgment should not apply to all of our cognitive faculties: understanding, judgment, and reason. I think it is important to interpret Kant’s claim on universality as always context sensitive in a certain respect: to think from the standpoint of anyone will, by necessity, always be context dependent since the action will always take place in some particular context.

What is at stake is still the relation between the particular and the universal, and how the former derives validity by relating to the latter. The claim on universal validity in Habermas’ discourse theory has been countered by some of his critics who have argued that the contextual conditions of communication are ignored in his model (Habermas 1996; Young 2002). The importance of transcending the merely private subjective conditions, however, appears to be recognised by both Habermas and his critics. Rather, what is contested concerns the role of the particular: as constituent and necessary of all kinds of judgment, or as contextual limitations of legitimate communication in public deliberation. In the following we shall explore the relation of Kant’s faculties of cognition and maxims of common human understanding with public reason in deliberation.

4.3 *Kant’s Maxims of Common Human Understanding*

A main concern in Kant is to explain the grounds and limits of human reason. In doing so, he holds practical use of reason to be the more fundamental, according to Onora O’Neill (1989). Practical use of reason is fundamental by enabling us to act autonomously, i.e. not to be ruled by external forces. The only limit to this freedom is the categorical imperative or the universalization principle. Likewise, we have connected reflective judgment to public reason by way of publicizability of particular judgments. This point is fundamental to understanding why public use of reason is of such importance.³ Basically, it is due to Kant’s claim that the public use of reason should always be free. In order for our public use of reason to be free

³ The distinction between public and private use of reason demarcates the difference between *sensus communis* and *sensus privatus* (O’Neill 1989, p. 45). The former is identified with enlarged

we must look upon acts of communication as the proper objects of toleration. The reason why is because toleration is seen as a response to communication. This is a more profound concept of toleration as compared to viewing utterances by others as mere expressions. The basic point is that *communication* rather than *expression* is required in public reason. Part of this claim on freedom to make public use of reason builds on the maxims of common understanding: (1) to think for oneself, (2) to think from the standpoint of everyone else, i.e. enlarged thought and (3) always to think consistently (Kant 1952, § 40, p. 294). The first is the maxim of understanding, the second the maxim of judging, and the third the maxim of reason. All of these maxims of public reason are more profound than any other use of reason, and they are standards for addressing “the world at large” (O’Neill 1989, p. 48). In addressing the world at large reason accepts no external authority. It is this use of reason that is at work in judgment of particular situations, derived from the human capacity for reflective judgment.

Thus, we see how reflective judgment and enlarged thinking in Kant is basic to any other form of communication. This is the important point to be drawn from his model for validation in the public faculty, and it is particularly interesting because it gives an account of how reflection of particular situations and conditions can make a claim to validity. This holds true as far as the appeals put forth address a universal audience. By contrast, addressing only a restricted audience cannot make claim to something that is universally communicable. Still, private uses of reason may be legitimate for certain purposes. The important point to be made is that “[t]here are no good reasons for tolerating any private uses of reason that damage public uses of reason” (O’Neill 1989, p. 49). Thus, arguing with Kant, it would be legitimate to accept uses of reason that do not address the world at large—perhaps even by accepting external authorities—as long as they serve public reason.⁴

In returning to our case of Breivik’s Manifesto, we clearly face an example of a kind of reason that is likely to damage public use of reason. Whether his use of reason should be considered private rather than public is not the most important. In line with the distinction between real and fictitious outlined above I shall argue that the fictitious even more than the private character of Breivik’s use of reason is the more important. Not only is it an attempt to conceal that his opinion has not been exposed to public scrutiny; the method at hand, i.e. publication on the Internet, reinforces the impression of being public. This is particularly so as it resembles documents and uses of reason that are genuinely public in a Kantian sense. Reflective judgment and public use of reason is the liberation of our judgments from subjective private conditions, a necessary condition for weighing our judgments with the possible judgments of others, by putting ourselves in the position of every one else. Failing

thinking, addressing an unrestricted audience, while the latter is restricted, for instance, by filling the roles of clergy, officers, and civil servants.

⁴ It is disputed whether public reason should be seen as a gradual process towards more enlightenment, which concerns the relation between the first and the third maxims of *sensus communis*: the maxim to think for oneself and the maxim to think consistently. If it is conceived in developmental terms, then we may envisage an ongoing process towards better understanding that can only be judged along the developmental line.

to do this while arguing *as if* one's opinions qualify as public is the main flaw of Breivik's Manifesto. Still, as an expression within the public domain of utterances it remains to discuss whether we are in any sense obliged to tolerate it. As has been argued in the ongoing debate of liberal democratic freedom of expression there seems to be no substantive criterion for drawing a line. Instead this paper is an attempt to establish a procedural criterion for toleration.

5 Responsibility and Tolerance at Stake

From the argument developed above we shall move on to discussing why public reason should be tolerated, as opposed to fictitious public. Tolerance is here based on a positive account of it (Addis 1997). Much in line with the positive account of freedom Addis' concept of positive tolerance requires action or engagement. Another concept for positive tolerance applied by Addis is 'pluralistic solidarity' (Addis 1997).⁵ Briefly, to tolerate means to engage with those we disagree with, not only to leave them alone, or allow them to remain aliens. According to this understanding tolerance requires genuine communication, i.e. connecting with others' opinions. Lack of such a relation does not necessarily call for disrespect, though. The point here is to identify what expressions should count as worthy of dialogical engagement, and thus become part of public reason.

Breivik's Manifesto clearly appears not to be meant for public reason in our sense. The message is a claim on an unchallenged truth or ideology about the state of the arts for Europe in particular. The primary aim in his mind is to save Europe from the threat of dangerous ideologies, in particular the Muslim. But isn't such a fear legitimate, and why would it not be worthy of respect or tolerance? I will try to clarify this point by comparing Breivik with another character whose opinions were also not challenged by opposing viewpoints.

5.1 *Stefan Arkadievitch vs. Anders Behring Breivik*

The character to be compared to Breivik is Stephan Arkadievitch, a fictional character in Leo Tolstoy's *Anna Karenina*. He never changed his mind, or the newspapers he used to read. He never questioned the sources that he made use of for being informed. He picked the newspapers that suited his class and his position. Thus, he never run the risk of being forced (by some better argument) to change, and even less to improve, his opinions. If he changed opinions it was solely due to the papers he read—and any such change he compared to changing his hat! (Tolstoy 1886). In this character we see the kind of citizen that gives rise to the problem of the public.

⁵ Addis' concept 'pluralistic solidarity' builds upon the concept of positive freedom, cf. Isaiah Berlin (1958/1969), Charles Taylor (1994).

Even though Breivik, unlike Arkadieitch is deeply involved with political issues, they are both operating in a way that demonstrates the problem of the public.

The relevant similarity in the two cases is that ‘technologies’ in some sense seem to prevent them from being better informed. While Tolstoy’s character believes that he is being sufficiently well informed through the media channels available to him, Breivik in a similar way acts as a media institution himself (cf. Cass Sunstein’s *Dailey Me*). Relevant information that could have informed them better is clearly missing in both of these two cases.

We are normally used to thinking that public institutions like medias not only provide us with relevant information, but as well that they provide us with improved qualified information. Neither Arkadieitch nor Breivik, however, seem to bear witness to becoming better informed or more knowledgeable in a relevant sense. Like in Breivik’s case, Tolstoy’s character also access only the information he wants to, i.e. he always reads the papers that will confirm his preconceived viewpoints, according to what he has defined in advance to be suitable for someone of his position. Like Arkadieitch, Breivik also sticks to opinions he already accepts to be true. In a similar manner they both avoid having their viewpoints challenged by opposing opinions. In a likewise manner both Breivik and Tolstoy’s character seem to be immune to counterarguments, and they both appear to stick to the opinions that are predicated, either by the class one belongs to (Arkadieitch) or by the person himself (Breivik). Still, I shall argue that there is a relevant difference between the two cases: referring to what is suitable to one’s own class or position presupposes some communicative relation to the surrounding community, as opposed to Breivik’s case, as the latter seems to be more or less secluded from any communicative community.

There are two related, but still different phenomena involved in this comparison. On the one hand there is the possibility and risk of filtering, which certainly differ in the two cases, but this difference is one of degree. Stefan Arkadieitch’ opinions are based on a high degree of filtering, and so are Anders Behring Breivik’s opinions, although to an even higher degree. However, when it comes to seclusion there is a difference between the two cases, which is not only one of degree, but also of quality. This difference is the one described above, which I have spoken of as a difference between a real and a fictitious public. The Breivik case is not only a media problem as such, rather it has to do with a blind belief in the possibility of creating a public by way of new technologies. Thus the digital transition and the new medias seem to add something to Dewey’s old problem of the public.⁶

⁶ At this point I would like to point to Luciano Floridi’s concept of hyperhistory which I find helpful in grasping the radical difference between medias before and after the digital transition. Floridi makes the point the hyperhistory is characterised by social wellbeing being dependent on ICT. Following this line of thought we may view Breivik as a grotesque illustration of this point. Had he lived in history—e.g. at Stefan Arkadieitch’ time—it’s doubtful whether medias by then would have contributed to his wellbeing the way the Internet has made possible.

5.2 *Tolerance of Real or Fictitious Publics?*

From the above I shall assume that Stefan Arkadieievitch participates in a real public, as opposed to Anders Behring Breivik who is a member of a fictitious public, mainly unfolding in virtual environments. The main distinction between the two ‘realities’ is not, however, whether they are virtual as opposed to real, but rather whether they are fictitious as opposed to public. The use of reason is still to some extent public in Arkadieievitch’ case, while fictitious as far as Breivik is concerned. However, although the virtual character of the communication is not the main source of the problem, there still seems to be a non-trivial connection between virtual environments and a fictitious public, as virtual realities appear to be a necessary, though not a sufficient condition for fictitiousness.

It could easily be argued that the distinction between the real and the fictitious equals the difference that could be drawn between the real and the virtual.⁷ This is, however, misleading, as a virtual reality may very well be communicative in e.g. a Habermasian sense, where communication is based on public use of reason. As an example there have been several occasions of political activist actions starting with mobilizing people in a virtual world online before spreading offline (Thorseth 2006). By contrast, the public in Breivik’s case is based in fictitious use of reason, while pretending to make appeals to a real and universal audience.

As mentioned earlier, Cass Sunstein and many others have written extensively on the problem of filtering and group polarisation. A distinction between real and virtual worlds is anticipated to be the relevant distinction, and the virtual tends to be associated with a radical threat to public reason. From the arguments above I shall claim that this is partly misconceived, as the real threat rather has to do with fictitious publics. Against this one could of course object that the fictitious character needs not necessarily be associated with a threat to public reason since there need not necessarily be an internal link between extreme ideologies and their fictitiousness. This is the reason for my claim that the fictitious character should be procedurally defined. The fictitious character of a claimed public should be defined by its communicative methods. As a consequence it is an open issue whether fictitious *publics* need to prevail.

This procedural criterion is based on an argument developed in Thorseth, arguing in favour of a distinction between legitimate and illegitimate paternalism in polyethnic conflicts (Thorseth 1999). Briefly, the salient point is that a claim on publicizability is basic to recognition. Unwillingness to discuss publicly what has already become contested in the public domain is in some cases based on procedural fundamentalism, as e.g. depriving others of autonomous “yes” of “no”.⁸ Here I want to establish that real and virtual publics are not moral opposites, while the contrast

⁷ A thorough analysis of the character of the virtual is discussed in Ess and Thorseth (2011).

⁸ This claim is based on Habermas’ argument against apriorily defined group rights because autonomous accept or refusal may thereby be curtailed. As an example, everyone should be allowed not to consent to norms and practices that have hitherto been passed over from previous generations (Habermas1994).

between real and fictitious clearly is: a qualified “yes” of “no” may be genuine or real in a virtual world, even though the consentor knows that a simulation is going on. This is different in the fictitious case where alternative options of choice seem to be missing. As an example, people may very well be able to produce their *Daily Me* while still being aware that they are making this choice consciously. In Breivik’s case, like many other fundamentalist cases we have no good reason to believe that their *Daily Me* results from a non-conscious choice, rather the opposite. This may be so whether they act in a real or a virtual world, i.e. whether they address a real or a virtual audience. The upshot of this argument is then that the real/virtual distinction is not of vital importance in defining the real/fictitious distinction. This may sound trivial, but I believe it is no, as the virtual character of the new media technologies is often believed to be the main source of damage to public reason. Virtuality may be associated with creativity and offer possibilities of broadened reasoning, while the fictionality described above rather tends to work in an opposite direction.⁹ As for now the salient point is the ways fictitious publics diverge from real publics in our discussion of public use of reason.

One serious concern discussed in this paper is the risk of a real confusion of arguments *as if* they were part of public reason. In the aftermath of the Breivik case this risk has been expressed in terms of the influence this case—both the Manifesto and the trial—has on a broader public of people holding extreme ideological viewpoints. I shall argue that this risk of private use of reason *as if* it were public is part of the problem of the public in the realm of digital transition. Recalling Onora O’Neill’s concept of publicizability and Kant’s distinction between private and public use of reason she claims that publicizable communication is “in principle accessible to the world at large and can be debated without invoking authority”.¹⁰ The universalizability claim attached to this constraint certainly is absent in Breivik’s case.

6 Concluding Remarks

The main concern discussed here is the possibility of producing arguments *as if* they were part of public reason in online environments; *as if they* qualified for addressing a universal audience. To make something publicly available is not to be confused with publicizability in O’Neill’s sense. Dissemination of a Manifesto at the Internet is thus not necessarily publicizable. The difference between ‘publicly available’ and ‘publicizable’ becomes particularly urgent given the new information technologies of our times. Breivik’s Manifesto is in this sense made possible due to the digital transition, and it is as such a result of living in hyperhistory, in Luciano Floridi’s

⁹ See Thorseth (2008) for a discussion of public reason and broadened way of thinking.

¹⁰ O’Neill (1989, p. 34). Authority here refers to the authority of reason, as opposed to external authorities.

sense.¹¹ For humans to live in the hyperhistorical era then implies a dependence on ICTs as fundamental for wellbeing, also when it comes to communication itself. If this analysis is correct we may envisage a scenario where the welfare of citizens depend on their capability to master the new technology. But does it necessarily also imply that we are left without any means of distinguishing between legitimate and illegitimate modes of communicating? I think not. But in order to maintain a human society we need to be able to draw the line between tolerable and non-tolerable modes of public reasoning. In this paper I have tried to sketch a strategy towards establishing this line, by identifying fictitious use of public reason as a mode of communication that should not be tolerated.

The virtual is not the real enemy; rather it is the ideological aspect linked to fictitious publics—the main reason being the possibility of ideological and fictitious “publics”. A further question arising from this claim is, however, whether the kind of “publics” in view could exist without the digital and virtual environments. My thesis is that they could not, thus pointing to a genuinely new aspect of Dewey’s problem of the public. Floridi’s concept of hyperhistory presented above is helpful in understanding how the digital transition in a radical way has changed the conditions of public reasoning. Whether the environments are virtual or “real” is less important.

My claim in this paper has been that the threat to public reason of today basically has to do with the possibility of creating fictitious publics. As argued above the real threat to public use of reason is not the virtual worlds online per se. The decisive criterion is whether we are facing a fictitious public without effective means of recognizing it. The argument developed here hopefully contributes to help identifying the problem of the public in an era of digital transition.

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¹¹ Floridi (2012): “[T]o summarise, human evolution may be visualised as a three-stage rocket: in prehistory, there are no ICTs; in history, there are ICTs, they record and transmit data, but human societies depend mainly on other kinds of technologies concerning primary resources and energy; and in hyperhistory, there are ICTs, they record, transmit and, above all, process data, and *human societies become vitally dependent on them and on information as a fundamental resource*”(author’s italics).

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Part VIII
The Onlife Initiative—Conclusion

The Onlife Initiative—Conclusion

The Onlife Initiative

This is not a conclusion, if a conclusion is meant to be wrapping up what should be remembered from the preceding work. This is not an executive summary either, if an executive summary is all that needs to be read for grasping the added value of an initiative.

The Onlife Manifesto is the agora of this intellectual venture and the accompanying material is a landscape where everyone is invited to walk or navigate at leisure and hopefully be inspired, in a way that leads to revisiting his or her referential frameworks. Indeed, none or few of the recommendations put forward in this work are “ready-to-use”: they all require an active reinterpretation or translation by each reader, depending where she or he sits in this hyperconnected era. This being said, we could have skipped the conclusion but chose to end with the following.

The Onlife Manifesto is our contribution on the shifts that policy makers and other stakeholders need to consider in order to shape public and private action in a hyperconnected era. Each word of *The Onlife Manifesto* has been carefully considered and if only one thing should be read, it is this Manifesto and not this conclusion.

An essential component of this reshaping has to do with design: governance actors ought to pay particular attention to this dimension of the onlife experience: in addition to the traditional hard and soft law-tools of governance, such as national rules, international treaties, or codes of conduct, the governance of a complex multi-agent system does increasingly hinge on the technical aspects of design mechanisms.

The reality as it unfolds in a hyperconnected era calls for reengineering concepts and reconsidering conceptual frameworks: this requires a research effort from the social sciences and humanities research community, an open attitude from all scientists towards genuine interdisciplinarity, and a proactive attitude towards citizen’s engagement. Horizon 2020 offers a timely and wonderful opportunity to support these three objectives and should be mobilised to this effect.

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We consider that the work initiated with the Onlife initiative could usefully be pursued in a second phase. Indeed, several paths have been opened and require further explorations and refinements, notably regarding governance, responsibility and attention.

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