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# **Global Power and Politics**

**Web 3.0 Philosophy: Internet in the  
perspective of a unified theory of information**

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*Abstract: By basing a unified theory of information upon the philosophy of the Not-Yet of Frankfurt School theorist Ernst Bloch, we are able to criticise current developments of the World Wide Web. Most applications seem to focus on getting attention only. But there are quite a few applications that might anticipate the meeting of the needs of common global problem-solving attempts which is at the core of a unified theory of information. The term „communities of action“ is developed in contrast to the abundance of „communities of practice/interest“. The paper exemplifies how Practical Philosophy can help guide scientific reflection and technological advancement.*

At first glance, it seems an intrascientific issue of whether or not in the field of information there is an attempt to grasp the big picture and develop a shared theory by which the whole variety of different manifestations of information processes in society and in the world at all might be understood. Like in everyday thinking where people strive for connecting unconnected experiences and even reconciling irreconcilable experiences in order to arrive at a coherent overall view (just think of the psychologically well-described tendency of ordinary people to avoid cognitive dissonance), science is heading for consilience – a term attracting interest when Edward O. Wilson published his book of the same title (1998) –, that is, a unity of knowledge, that allows for better and better explanations and predictions. This is accomplished via the construction of new theories that include the findings of the old theories as kind of approximations and at the same time are able to explain and predict phenomena that were not covered by the old theories. Thus, in science there is a tendency towards more and more overarching theories, towards more and more generalising theories, towards more and more universal theories. Unified theories address the universal by unifying the multiplicity of so far incoherent theories bound to particular levels. Unified theories belong to the intrascientific progress towards the universal.

However, it is not just a case of pure scientific curiosity. If we take into account that science is not work in an ivory tower but a social undertaking that satisfies social demands, that is, that there is an extrascientific function all science has to fulfil – the betterment of social life and solving problems that arise from social practice –, then it does not come as a surprise that on the threshold of the information age science is concerned with information and that there is a quest for a unified theory of information (UTI) (see Hofkirchner 1999).

The information age is the age of information societies which industrialised societies are transforming into which is visible by the spread of new information and communication technologies (ICTs), while the industrial age is the age of industrial societies into which agricultural societies have been transforming worldwide. Each transformation is known as a revolution and all revolutions together are said to form the evolution of civilisation.

On the one hand, there is a lag of scientific development behind societal and technological development. Development in technology is not accompanied by an equally rapid growth in scientific insight, let alone foresight, as to the impacts of technology on levels of society other than that of technological organisation. Attempts to observe and understand the basic nature of this change is still second place. The public use of the notion of “information society” has been reduced to denoting a society in which applications of modern ICT are widely spread in order to facilitate the handling of what commonly is called “information”. A scientific understanding of this transformation has not had time to develop. There is not yet a proper “science of the information society” or a proper “science of information”.

On the other hand, the state of the relationship between science and technosocial development of today regarding information can e.g. be compared to the state Karl Marx was confronted with in respect to labour. In his time labour could become and necessarily became a matter of scientific interest, since labour as a matter of fact had gained a new role in society. It became something more abstract in social life, that is, it was treated in society irrespective of its concrete characteristics. Marx called that a “real-abstraction” – an abstraction that occurred in reality due to the real treatment of labour in emerging capitalism which became the basis for the general concept of labour in scientific thought. It was only then that the concept of labour could be stretched back to former social life in the history of humanity and that other phenomena than industrial work could be subsumed under the concept of labour, albeit as different manifestations. Making use of this notion of real-abstraction we might assume that information has gained as decisive a role in society nowadays so as to foster a new scientific conceiving and theorising – that it has turned into a real-abstraction which is the rationale for devising a general idea as well: what labour is in regard to human history as seen from the perspective of industrial society, information is in regard to history from the perspective of information society.

What then has changed with information? Is it just the quantity of what can be conveyed by ICTs? Or is the quantity of that just the indication for a qualitative change taking place?

There has been a qualitative change in the role information can play for the development of society, and this change is unprecedented in the history of humanity. Information has become the bearer of survival, the key to our future. For the information age is, fundamentally, the age of global challenges. The impressions made by the atomic bomb, industrial and agricultural catastrophes, hunger, suffering and death in the poor parts of the world, starting in the middle of the last century but persistent in the new millennium, have raised consciousness of the destructive and fallible nature of the human technosphere, the fragile and finite nature of the human ecosphere, and the unsettled, unbalanced nature of the human sociosphere. It has become a part of general knowledge to realise that the existence of such global challenges can endanger the persistence of today's societies all over the world. The global problems are global in a twofold sense: first, they concern humankind as a whole (as object); second, they can also only be solved by humankind as a whole (as subject). The risk this crisis carries is that humankind may be wiped out. The chance it offers, however, is that humankind may be raised to another level of humanity. It is disparities in the development of the relations amongst humans, between humans and nature and between humans and technology that build obstacles to keeping society as a whole on a stable, steady path of development. It is malfunctions in the sociosphere, ecosphere and technosphere that continue to aggravate the global challenges. And it is information that turns out the only remedy. It is information that is required to steer society. It is information that is required to reorganise humanity onto a higher level of organisation. It is information that is required to alleviate and reduce the frictions (see Heylighen 2007) in the functioning of those systems that make up humanity from the individual to ethnicities to nations to world society, from economy to politics to culture, from society to ecology to technology, from the social realm to the biotic realm to the physical realm. In a word, the continued existence of humanity has shaped up as impossible without conscious and cautious intervention in the process of its own development including all spheres of intervention. This intervention that orients towards the relinking of our world falling apart due to processes of heterogenisation, fragmentation and disintegration is

informational in its nature, but as it extends from the human to the living to matter, it necessitates a deep understanding of the information processes going on in the entire world we inhabit.

Knowledge as capacity to act means today the capacity to act vis-à-vis the global challenges means knowledge about how information guides the processes that puts us at risk. Hence information is the *conditio sine qua non* for the further existence and development of humanity.

Collective intelligence is the synergetic effect that is produced when intelligent agents co-operate. The intelligence produced when co-operating exceeds the intelligence of each of the agents.

From an evolutionary systems theory point of view, society is but another self-organising system that constitutes that step in the overall evolution which represents the most sophisticated form of information generation. Over and above that, the issue can be raised as to whether this form of social information processing will by means of electronic networking, i.e. linking of humans and computers together, undergo a transformation to a new and higher level. That is to say, will a global brain not only be capable of monitoring the manifestations of crises in the socio-economic, environmental and technological spheres, but also enable humans to set the world society on a path towards sustainable development which is tantamount to a leap in societal self-organisation?

Those who argue in favour of the thesis that the spread of computer-linked telecommunications will provide the hardware of an emerging global nervous system and brain, point out that after the inventions of speech, writing and the printing press the diffusion of ICT is setting the stage for extending human collective intelligence into novel socio-technical forms that might regain the inter-connectedness of bacteria (Bloom 1999), if not transcend both the intelligence of humans and machines of today by even more than human information processing systems transcend pre-human ones (Haefner 1991). The introduction of each of the series of information technologies created closer and closer links between the individuals and groups of individuals as elements and subsystems of the social systems. So does the introduction of the

electromagnetic communication technology and computerisation. But they create interdependence at a planetary level. “In principle, this process does not differ from the evolution of primitive nervous systems into advanced mammalian brains”, says Tom Stonier (1992, 105): “Relatively few nerve cells, relatively poorly co-ordinated, evolving into an organ consisting of trillions of cells so exquisitely co-ordinated that our understanding of how it works still eludes us. With the evolution of the global brain we are dealing with a parallel process, but at a much higher level of complexity.” “Each node, rather than being a neuron, is a person comprising trillions of neurons ... coupled ... to their personal computers”. “We are now dealing with the very top end of the known spectrum of intelligence.”

However, it is right to state that change in quantity is only a necessary precondition, but not a sufficient one, for change in quality (Fleissner et al. 1998). Interdependence is but a step, if that, towards integration, not integration itself. Like the qualitative leap dividing phenomena at the physiological level (that is, brain phenomena like electrical and chemical neuronal activity) from those at the psychological level (mind phenomena like states of consciousness and conscience), there is a jump required from the interconnectivity of intelligent nodes in the global network, to the “software” of something like a mind of global society. Furthermore, the software to be run by the super-organism of future world society in order to be able to sense, interpret, and respond (Stock 1993, 80-91), lacks reason, more than ever before. Societal development in this phase of transition is marked by a sharp discrepancy between the practice of technically unifying the world, and the social theory of world unity; between the universe of communication of nation states, and the universal community of mankind (postulated time and again in models since the enlightenment); between the reality of globalisation and the ideals of humanity, evolving a global mind including self-awareness, consciousness, and conscience (Richter 1992). Today, existing societies lack the intelligence, logistics, and organisations which they need to secure their material reproduction, and to plan and carry out strategies which would set the world on a path towards sustainable development. Such development would go about solving problems such as the use of force for political means, the gap between rich and poor (both nations and individuals), and damage caused by pollution and extraction of raw materials. This obvious capacity for self-destruction is a sign that the global development of society has entered a decisive phase – a phase in which the degree of complexification and

differentiation it has reached can be compensated for by the opposite trend of simplification and integration into a newly-created suprasystem. Contrary to evolutionary information-processing systems on the pre-human level, the kind of self-organisation which is needed to overcome the crises in question requires actions of conscious individuals, and will not emerge from technological progress alone (Laszlo 1989).

Seen from this point of view, the idea of a global brain becomes functional when viewed in the context of a possible transformation of the evolution of consciousness into conscious evolution. Béla H. Banathy, the advocate of social systems design, takes as his point of departure a quotation of Jonathan Salk (1983, 112): "... human beings now play an active and critical role not only in the process of their own evolution but in the survival and evolution of all things." As Banathy adds in 2000 (203): "If we accept this responsibility and engage creatively in the work of evolution we shall ... be the designers of our future, we shall become the guides of our own evolution and the evolution of life on earth and possibly beyond." This becomes crucial, in particular, because society has to be empowered to cope with global challenges in several respects. Society has to be endowed with a means of enhancing its problem-solving capacity regarding the challenges it is confronted with; society has to be enabled to meet the growing demand for governance in the face of tendencies of fragmentation, heterogenisation and disintegration.

Now, seen in this light, how can the development of Internet, in particular, the Web and the advent of Web 2.0 be explained and evaluated? How can the development of a Web 3.0 be approached?

Existing forecasts as put forward, e.g., by the inventor of the term "Web 3.0", Nova Spivack, or the philosopher of information, Luciano Floridi (personal communication), eventually, reduce to technology as driving factor for the further development of "Web 3.0", "Web 4.0", "Web 5.0". In contradistinction, I propose to base discussing actual and possible stages of the Web upon the societal functions the Web is fulfilling. I utilize a concept of different categories of information processes going on in social life and being technically supported by ICTs. These are cognitive, communicative, and cooperative processes.

- Cognitive processes (including emotional ones) are individual, or in case of any supraindividual social agency named a subject, intrasubjective, processes of generating information. Human Computer Interaction as discipline deals with how cognition is being supported and influenced by using ICTs.
- Communicative processes are interactive, that is, among individuals or other social subjects. They are information generation processes due to the coupling of cognitive subjects. Computer Mediated Communication is about these processes when supported by ICTs.
- Cooperative processes are integrative, concern the supraindividual level and let information emerge from synergetic effects of communicating subjects. Originally, this topic was researched by Computer Supported Cooperative Work from the perspective of the involvement of ICTs. Nowadays, this approach takes advantage from research in collective intelligence, wisdom of the crowds and so on.

From these definitions follows that cognition is the necessary condition for communication and communication the necessary condition for cooperation. In addition, I assume that if one level serves the function of a necessary condition for the next higher level then the lower level might be influenced, shaped, adjusted according to this function by the higher level.

So I can categorize Web phenomena along the dimensions of information generation.

Furthermore, since deliberating on Web 3.0 includes technology assessment and design of technology (“Technikgestaltung”), taking a neutral, value-free stance in identifying the necessary conditions for the possible future of the Net is not appropriate. We have to take that into consideration which is not only possible but also desirable. This makes the approach at hand a critical one. For it includes not only an account of the potential that is given with the actual but also an evaluation of the potential which sorts out the desired. Thus philosophy embraces an ascendance from the potential given now to the actual to be established in the future as well as an ascendance from the less good now to the better then which altogether yields the Not-Yet in critical theorist Ernst Bloch’s sense (see e.g. Bloch 1959). That is, we criticize the present against the blueprint of a better future. And we do this, after Bloch, by identifying phenomena *hic et nunc* and hidden in the present that nevertheless are able to anticipate and foreshadow a possible better future. This possible better future is cast as vision of a Global Sustainable



Information Society. By that I define a society that, on a planetary scale, is set on a path of sustainable development by the help of ICTs. That is, I suggest that the overall value be sustainability that denotes a society's ability to perpetuate its own development. Complying with sustainability implies complying with social values like justice, equality, freedom, solidarity as well as with sustainability in the ecological and technological sense. These values to be implemented need, above all, the working together of different partitions of humankind, a planetary discourse aimed at the working together, and intelligent actors ready for the planetary discourse.

So let's evaluate Web phenomena according to their contribution to the working together which addresses the cooperative dimension, to the planetary discourse which addresses the communicative dimension, and to the intelligence of actors which addresses the cognitive dimension.

I draw upon generalizations already done in recent literature. In particular, I discuss Benkler 2006, Sunstein 2006, Lovink 2007 and Gurstein 2007.

When addressing the utopian and dystopian views regarding the development of the Net, that is, the view of virtual communities to revitalize human communal existence and the view of physical communities being supplanted rather than being supplemented, Yochai Benkler (2006) uses the distinction between strong ties and weak ties, introduced by Mark Granovetter, to summarize empirical studies on ICTs strengthening or fragmenting social relations as follows: strong ties which relate to family and local communities were not weakened but rather strengthened by the use of ICTs and new weak ties were created in addition (see chapter 10). These new weak ties have established what is known by the terms "communities of practice" and "communities of interest" and are instrumental for the individual but not in the way that they are to become the dominant mode of connecting to other people. However, Benkler seems to see an exception from this rule: the emergence of social software and peer-production like with F/OSS or Wikipedia make the group more important than the individual; they go beyond a community of mere interest in that they "allow the relationship to thicken over time" (p. 375).

Also Cass R. Sunstein who deliberates over how many minds can produce knowledge and avoid failures arrives at a rather positive evaluation of F/OSS and Wikipedia. The success story of F/OSS is due to the following factors: “Many people are willing and able to contribute, sometimes with the prospect of economic reward, sometimes without any such prospect. It is often easy to see whether proposed changes are good ones. For open source projects, filters are put in place to protect against errors. The problems associated with deliberation can be reduced because we are often dealing with eureka-type problems, where deliberation works well. Open source projects typically combine deliberation with access to widely dispersed information and creativity” (p. 195). And Wikipedia “provides an exceptional opportunity to aggregate the information held by many minds. Wikipedia itself offers a series of deliberative forums in which disagreements can be explored” (p.195). Contrary to F/OSS and Wikipedia, the blogosphere “offers a stunningly diverse range of claims, perspectives, rants, insights, lies, facts, falsehood, sense, and nonsense” (p. 187). Sunstein lists some positive examples but they seem to be outweighed by negative ones because the blogosphere “runs into the usual pitfalls that undermine deliberation, sometimes in heightened forms” (p. xiv).

Geert Lovink (see 2007) who sets out to theorize the Internet culture is critical of the blogosphere to an even greater extent. According to the data he finds, blogs are used primarily as instruments for managing one’s self, for marketing one’s self, for making P.R. for one’s self. Therefore he doubts that blogs belong to groupware or social software. They are rather the follow-up generation of the homepage. He quotes from a blog that writers don’t care about whether or not a community forms as result of the writing. Blogging, he says, is competing for a maximum of attention. And, we can add, this is true not only for the blogosphere. Here the similarity to the sphere of so-called social software platforms like Facebook is striking: what counts is being linked. Lovink criticizes the superficiality of content. In many cases existing information is only reproduced, he bemoans, instead of creating a new one. At the same time he admits that blogging, annotating and building links could be a start for defeating the indifference. Together with Ned Rossiter he opts for “organised networks” that are useful in strategic contexts that transcend tactical ones. “Networked multitudes create temporary and voluntary forms of collaboration that transcend but do not necessary disrupt the Age of

Disengagement” (2005). In organized networks he seems to realize the ideal of free cooperation in which the result outperforms the sum of individual performances.

Michael Gurstein, the father of Community Informatics, is eager to distinguish between networks and communities. While networks are “structured around the relationships of autonomous and self-directed individual actors (or nodes) where the basic structuring is of individuals (nodes) interacting with other individuals (nodes) with linkages between nodes being based on individual choice”, communities “assume collectivity or communality within a shared framework which may include common values, norms, rules of behaviour, goals and so on” (2008, p. 16). He refers to Barry Wellman’s notion of “networked individualism” the meaning of which he puts on a level with the meaning of the “Facebook society”. He interprets Wellman’s networks as externally driven ones that combine fragmented individuals and contrasts it with “self-initiated (self-organized) and participatory networks which inter-link individuals not on the basis of fragments of identity but on the basis of self-initiated and self-realized identities. These networks function as “communities” (whether based on physical or virtual connections) through which action may be undertaken, projects realized, reality confronted and modified” (p. 20). He goes on stating, “These communities provide a basis or a foundation element for the construction of an alternative reality” (p. 20). Community Informatics then is the way to “provide the means for communities to be enabled and empowered and to effect action in the world” (p.21).

Taking these positions and findings into account, my overall judgment on the development of the Web is the following: Web 2.0 is something ambiguous, it oscillates between a positive and a negative manifestation, and, because of that, it is likely transitory.

On the one hand, the usage of terms like “social software”, “social media”, “social networking” aimed at characterizing Web 2.0 seems to typify euphemistic ideology because the meaning of “social” is blurring the distinction between the interaction of actors and the relationships that emerge from these interactions and exert a kind of dominance over these interactions, in turn. In most cases, applications reduce to the lower level of interaction only. Web 2.0 shares with Web 1.0 being instrumental for the competition in the attention economy. Thus it lays emphasis on individuals or individual

organizations being cognized and recognized by other individuals or individual organizations. What makes it distinct from Web 1.0 is an increase in interaction facilitated by new technological applications. However, interaction between them is functional for gaining attention, thus communication serves cognition instead of the other way round, let alone communication serving cooperation. Bearing in mind that “communities” are entities belonging to the supraindividual level, so-called “communities of practice” or “communities of interest” in which individual actors gather to pursue some practice – without need to share some interest – or to pursue some personal interest is instrumental to the individual actors only and do not qualify for the label of “community”. They represent weak ties that need not thicken among individual actors networked this way. Social networks reside on the interactive level but not on the integrative level. Barry Wellman’s networked individualism seems the predominant characteristic of Web 2.0.

On the other hand, there are, in the virtual space, examples of “communities of action” as we propose to term true communities existing in today’s reality – Wikipedia which is cooperation for producing a world repository of knowledge, F/OSS which is cooperation for producing software for the world, and there is a minor faction of blogs devoted to cooperation in that they want to help bring about a new way of thinking as underpinning for political action in global society. From a sociological, technosocial-systems point of view, these undertakings in peer production – though some of them as to the technologies used even date back to the time before Web 2.0 – prove the possibility of transcending networked individualism and realize “networked communities” or “community networks”, as Gurstein puts it. But they are yet islands of an alternative reality, pointing to the level of cooperation, albeit under the prevalence of the communicative and cognitive restraints of networked individualism. They might become spearheads of a transition to a Web 3.0 enabling and empowering communities such that a reorganization of today’s societies into a Global Sustainable Information Society can be envisaged. They might turn out as anticipations of a future development only after this development happened to come true. So far they manifest what is possible today and desirable for tomorrow too.

Thus we want to conclude: in principle, the Web, as the Internet at all, by virtue of its technical affordance, has the potential for transforming societies into networked

communities thereby advancing from the cognitive and communicative levels of information generation towards the cooperative level on which collective intelligence of humanity might capacitate collective action needed for survival of mankind. Whether or not this will come true and Web 3.0 will look alike, is up to the forces that shape technology nowadays.

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