

Cyberethics and Co-operation in the Information Society

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Abstract The task of this paper is to ground the notion of cyberethics of co-operation. The evolution of modern society has resulted in a shift from industrial society towards informational capitalism. This transformation is a multidimensional shift that affects all aspects of society. Hence also the ethical system of society is penetrated by the emergence of the knowledge society and ethical guidelines for the information age are needed. Ethical issues and conflicts in the knowledge society are connected to topics of ecological and social sustainability. For information ethics and cyberethics, the sustainable design of society, social, and socio-technological systems is important. In this context the notions of sustainability and co-operation are discussed. Based on these categories, the approach of cyberethics of co-operation can be theoretically grounded.

Keywords Ethics · Social theory · Information society · Knowledge society · Information age · Cyberethics · Norms · Values · Information ethics · Computer ethics

Introduction

The task of this paper is to theoretically ground the approach of cyberethics of co-operation. In this context the notions of co-operation and sustainability are of

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fundamental importance. Why have we chosen these categories as central for ethics in the information age?

Sustainable information society, sustainable knowledge society, sustainable productive information society, sustainable networked knowledge society, planetary sustainable information and knowledge society, participatory information society, inclusive information society, information society for all (see for example: Heinrich Böll Foundation 2003; Ospina 2003; World Summit on the Information Society Civil Society Plenary 2003): These are some of the categories that have in recent years been employed in the academic and the political discourse on the question which society is desirable. Overall, these discourses signify a shift towards the view that not just any information society that is brought about by the diffusion of digital networked information and communication technologies (ICTs) is needed, but an information society that is actively shaped by humans in order to establish desirable qualities. Normative judgements have become more important. But these discourses are also fragmented and are lacking a theoretical foundation that tries to give concise definitions of the categories in use. Overall, these categories show an increased concern about the fundamental qualities of the information society. Categories such as sustainability, co-operation, and participation seem to become more important in this context. That we term our approach “cyberethics of co-operation” reflects this overall shift in worldviews.

Our approach is outlined in this paper by first developing a notion of ethics that is dialectical and based on the notion of self-organization (“[Dialectical ethics as foundation of cyberethics of co-operation](#)”) and by then developing the notion of cyberethics of co-operation (“[Cyberethics of co-operation](#)”). Finally some conclusions are drawn (“[Conclusion](#)”). The approach outlined here in very general terms has recently been applied for ecological, technological, economic, political, and cultural questions of the information society. The results have been published as a monograph (Fuchs 2008).

The concept underlying the whole paper is the one of the information society. Hence it should first be clarified what we understand by this notion. There are various concepts that are used for describing the increasing importance of computerized information and communication technologies and knowledge in society: information society, knowledge society, post-industrial society, postmodern society, network society, virtual society, cybersociety, immaterial labour, internet society, etc. A common critique of these notions is that they argue that we live in a completely new society and ignore the continuities of modern capitalist society (Webster 2002a, b; Fuchs 2009).

In order to grasp both continuity and discontinuity, the old and the new, other concepts are needed: The notion of informational capitalism was first introduced by Manuel Castells (2000). However, a more theoretical account of this notion is still missing (see Fuchs 2008, 2009). The concept of informational capitalism is here employed for stressing that the production and accumulation of economic, political, and cultural capital (in the Bourdieuan sense) is shaped to a certain extent by knowledge and networked, computer-based information and communication technologies. In contemporary society, production, exploitation, power, hegemony, and struggles are increasingly organized with the help of and embedded into

transnational networks: The productive forces are strongly based on computerized network technologies, the relations of production are taking on transnational networked forms that result in the emergence of a flexible regime for the accumulation of economic, political, and cultural capital and the rise of transnational organizations that try to centralize power. The stratifying and centralizing accumulation processes that make use of networks are challenged by alternative transnational networks. The rise of global networks advances the antagonism of the collective and networked production of capital and its individual appropriation and the antagonism of the networked productive forces and the relations of production (Fuchs 2008).

At the heart of informational capitalism is an antagonism of information as commodity and information as gift; it is made up of two interwoven and antagonistic systems: a commodity economy and a gift economy (Fuchs 2008). Given all of these conditions it is feasible to speak of contemporary society as transnational network capitalism or global informational capitalism. The historical novelty is not that social relationships are networked, but that processes of production, power, hegemony, and struggles take on the form of transnational networks that are mediated by networked information- and communication technologies. Global informational capitalism is based on a transnational organizational model; organizations cross national boundaries; the novel aspect is that organizations and social networks are increasingly globally distributed, that actors and substructures are located globally and change dynamically (new nodes can be continuously added and removed), and that the flows of capital, power, money, commodities, people, and information are processed globally at high-speed. Transnational informational capitalism is a nomadic dynamic system in the sense that it and its parts permanently reorganize by changing their boundaries and including or excluding various systems by establishing links, unions, and alliances or getting rid of or ignoring those actors that do not serve or contribute to the overall aim of capital accumulation. Hence transnational informational capitalism is a stratified class-society. It is in this context that the phenomenon of the digital divide can be discussed.

We think that the information society concept is flawed overall and uncritical and that the notion of transnational informational capitalism provides a much better foundation for grasping contemporary society dialectically in its negativity as being shaped by antagonisms that cause social problems (see Fuchs 2008, 2009).

Dialectical Ethics as Foundation of Cyberethics of Co-operation

We ground our approach in dialectical thinking because we think that dialectical philosophy enables an approach that is critical, complex, and dynamic. Historically, dialectical accounts of society in the Marxist tradition have been those most critical of contemporary society. This is enabled by the inherent feature of negativity of dialectical thinking. As contemporary society is shaped by large societal problems (such as economic crisis, poverty, the gaps in income and wealth, the ecological crisis, global imperial wars, etc.), we think that society needs to be confronted with

its own negativity and that dialectical thinking is most appropriate in this context. Furthermore, dialectical philosophy in the Marxian tradition is also oriented on human practice; it hence not only analyzes the negativity of contemporary society, but also suggests that this negativity should be sublated by human beings in practical social struggles. Dialectical philosophy hence enables an ethics that is both critical and practical.

For Georg Wilhelm Friedrich Hegel, ethics is part of political philosophy; he has no separate moral theory (Marcuse 1941, p. 179). In Hegel's philosophical system morals form a part of spirit objective. Free will expresses itself as a formal, abstract right (property right), as morality that is defined as the right of the subjective will, and as ethics that are seen as substantial right. Morality for Hegel has to do with goodness and wickedness, the essential and the actual. The good would be the "absolute final aim of the world, and duty for the agent who ought to have insight into the good, make it his intention and bring it about by his activity" (Hegel 1830, §507). Wickedness would be "the most intimate reflection of subjectivity itself" and would stand "in opposition to the objective and universal" (Hegel 1830, §512). Ethics understood as moral life is for Hegel "the perfection of spirit objective" (Hegel 1830, §513). For Hegel, ethics encompasses family (natural spirit), civil society (the formal universality of relations of individuals), and the political constitution (the self-conscious substance of spirit objective). "The State is the self-conscious ethical substance, the unification of the family principle with that of civil society" (Hegel 1830, §539). Aspects of the state for Hegel are laws, the freedom of property that constitutes equality, the constitution, government, monarchy as the "constitution of developed reason" (Hegel 1830, §542) (in comparison to democracy and aristocracy as lower forms of reason), the nation, international law, world history, national spirit, and Christian religion. Hegel's ethics are an expression of the self-development of spirit, for him ethics are connected to the state, nation, and religion. "Genuine religion and genuine religiosity only issue from the moral life: religion is that life rising to think, i.e. becoming aware of the free universality of its concrete essence. Only from the moral life and by the moral life is the Idea of God seen to be free spirit: outside the ethical spirit therefore it is vain to seek for true religion and religiosity" (Hegel 1830, §552). For Hegel, the state is the expression of moral life and ethical sentiment. Religion is the consciousness of absolute truth (Hegel 1830, §552), the truly moral life is for Hegel a sequel of religion, faith, and the absolute idea of God. Hegel considers Christian religion as the foundation of moral life and the state. Hence for Hegel the absolute determinants of ethics are God and Catholicism. Hegel's philosophy is an example for the belief in the transcendental objectivity of God and religion.

Marx and Engels, influenced by Hegel's dialectical philosophy, but critical of his idealistic and ethical approach, considered morals as ideologies that try to legitimate religious, economic, and political domination and oppression and serve class interests by postulating the authority of an absolute subject. Marx considered religion and morals as opium of the people and right (the defence of morals in the form of laws by the state) as a mechanism for protecting private property. Marxists such as Antonio Gramsci, Theodor W. Adorno, Max Horkheimer, and Louis Althusser have further elaborated this aspect of Marxism as critique of ideology.

Marx and Engels argue that morals are an expression of coercive societies and that morality will vanish with the disappearance of class antagonisms because there will be no fundamental conflicts of interests that have to be legitimated ideologically. Moral theories are formed as a consequence of the economic conditions of society and are therefore considered as class morality by Marx and Engels. They argue that their approach is not moralistic, but a scientific one because they identify tendencies of the development of the productive forces that produce the potential for communism as a higher form of existence. The alternative to preaching morality here seems to be the identification of deterministic laws of history. Lukes (1985) has pointed out that the writings of Marx and Engels on moral questions are paradoxical because, besides the stress on historical laws instead of morals, one can find a lot of moral expressions that condemn capitalism as oppressive, exploitative, alienating, estranging, heteronomous, and present the vision of a better world (“the realm of freedom”) that is characterized by well-rounded individuality, pluralistic activities, abundance, the abolition of hard work and wage labour due to technological productivity, the disappearance of the performance principle and exchange, the free production and distribution of goods (“from each according to his ability, to each according to his needs”), and free time for idle and higher activity. The concept of freedom that Marx and Engels put forward questions freedom as the freedom of private property in means of production and understands it as freedom from scarcity and domination and as a community of associated individuals that provides wealth, self-ownership, self-realization of human faculties, and self-determination for all. They considered the bourgeois concept of freedom as narrow and as reducing freedom to participate in free trade, the free market, free buying, free wage labour, i.e. to the sphere of money that radically constrains the practical alternatives of action. Bourgeois freedom for Marx and Engels makes the producers free from their product and is therefore in fact a form of unfreedom and serfdom. In this context the notion of alienation arises and signifies compulsory wage labour, dispossession, and the crippling of human faculties.

Especially Lenin, Trotsky, and Stalin took up Marx’s and Engels’ concept of morality as class morality and of social development as a lawful, pre-determined process. Deterministic readings of Marx argue that a better society does not come about because it is ethically justified, but because it is causally produced. This critique of morality paradoxically ended up in a new morality that became an ideology that legitimated an oppressive regime (Marcuse 1958; Fuchs 2008). Stalinism recoded bourgeois values like family, performance and hard work in order to arrive at an alternative morality that argued that under Socialist rules old values serve higher principles. The result was a moral that resembled the Protestant ethics of capitalism, but was characterized as socialist ethics. Soviet ethics were based on the idea that privations and dictatorship were needed in order to establish a free society and to develop the productive forces. The idea of communism became an ideology and a transcendental absolute idea that legitimated a coercive system that was not too different from capitalist principles of domination. The idea that history is a lawful process and that hence socialism follows capitalism became an ideology that allowed Stalin to persecute critics because he argued that the Soviet system in any form is a socialist society because it is a social formation following capitalism

and that any criticism of the system is counter-revolutionary and means critique of socialism and to suggest a return to capitalism.

The alternative to a deterministic interpretation of Marx and Engels is to acknowledge a certain importance of morality in Marxism and to understand it as a philosophy of praxis that aims at the sublation of domination and exploitation in the practice of human emancipation and self-organization (Fuchs 2008). For Hegel, the essence of things means that they have fundamental characteristics and qualities as such that frequently are different from their appearance. Truth for Hegel is the correspondence of the essence and the existence of things; only true existence would be real and reasonable. In Marxism, Herbert Marcuse, in particular, has taken up Hegel's notion of essence and has stressed that essence is connected to possibilities and that a true society is one that realizes the possibilities that are enabled by its structural aspects such as technological forces, economic productivity, political power relations, world-views, etc. (Marcuse 1937, 1964; Fuchs 2008). Essence in society is connected to what humans could be (Marcuse 1937). Bloch (1959) in this context uses the category of "not-yet" to signify real (not abstract) potentials that could be realized, but have not yet been realized.

Connecting at its roots the problem of essence to social practice restructures the concept of essence in its relation to all other concepts by orienting it toward the essence of *man*. (...) Here the concept of what could be, of inherent possibilities, acquires a precise meaning. What man can be in a given historical situation is determinable with regard to the following factors: the measure of control of natural and social productive factors, the level of the organization of labor, the development of needs in relation to possibilities for their fulfilment (especially the relation of what is necessary for the reproduction of life to the 'free' needs for gratification and happiness, for the 'good and the beautiful'), the availability, as material to be appropriated, of a wealth of cultural values in all areas of life. (Marcuse 1937, p. 71)

For Marcuse, ethics are connected with questions of that which can and should be because it can reduce pain, misery, and injustice (Marcuse 1964, p. 106). The task for Marcuse is to make use of existing resources and capacities in ways that satisfy human needs in the best possible way and minimize hard labour (Marcuse 1964, p. 112). A false condition of society or a social system means for Marcuse that actuality and potentiality of society differ. Marcuse stresses by especially referring to early works of Marx such as the "Economic and Philosophical Manuscripts" and the "German Ideology" that in capitalism oppressed humans are alienated because they are dispossessed and that alienation means that humans and society are estranged from their essence. The sublation of the alienation of labour and man by establishing a realm of freedom would mean the realization of the human and social essence. One can read the works of Marx as a deconstruction of ideology, the identification of potentials that strengthen the realization of human freedom, and the suggestion that humans should act in ways that realize potentials that increase the co-operative character of society. Here both chance and necessity are important: Existing structures, i.e. social relations and forces of production in the economy, polity, and culture, determine certain

potentials of societal development (necessity), the human being in its social practices realizes potentials by creating actuality (chance). Freedom hence is freedom to create novelty that is conditioned (enabled and constrained) by societal reality. Marx's works can be interpreted as an ethics of liberation and co-operation in so far as they suggest that humans should act in ways that bring society closer to the latter's co-operative essence. Marx's stress on socialization (*Vergesellschaftung*) shows that he saw co-operation as an essential societal phenomenon and considered the realm of freedom as the realization of the co-operative essence of society. This is what Marx means when he for example speaks of "the return of man from religion, family, state, etc., to his human, i.e., social, existence" (Marx 1844a, p. 537), the "complete return of man to himself as a social (i.e., human) being" (Marx 1844a, p. 536), "the positive transcendence of private property as human self-estrangement, and therefore as the real appropriation of the human essence by and for man" (Marx 1844a, p. 536). For Marx, co-operation is an objective principle that results in a categorical imperative that in contrast to Kant stresses the need for an integrative democracy: Marx argues that critique ends with the insight that "man is the highest essence for man—hence, with the categorical imperative to overthrow all relations in which man is a debased, enslaved, abandoned, despicable essence" (Marx 1844b, p. 385). Critique of domination and ideology is the consequence of this categorical imperative. Such an interpretation of Marx and Engels stresses that morals do not fade if injustice vanishes, but that there is a potential for the emergence of an alternative ethics/morality of co-operation, a "really human morality" (Engels 1877/78, p. 132).

A dialectical approach in ethics was first established in Ancient Greece where dialectics was considered as a discursive method that allows the synthesis of arguments and counter-arguments. Since the nineteenth century dialectics has been conceived by Idealist and Materialist philosophy as a method that conceives reality as dynamic development process, in which other things contradict things so that a new thing emerges that eliminates and incorporates the old. Applying this method to ethics means that we take the elements from subjective and objective approaches and combine them in such a way that they form a new whole.

The important idea for us in subjective ethics is the cognitive dimension, the important idea in intersubjective ethics that social norms, values, and rules emerge in communication processes, the important idea in transcendental ethics that there are guidelines of morality, the important idea in Marxian ethics that co-operation is a foundation of freedom. Dialectical approaches maintain that there is an objective and a subjective level of ethics and that these two areas produce each other and are interconnected.

For establishing a dialectical notion of ethics, we employ the concept of self-organization. The notion of self-organization allows interrelating subjective and objective phenomena because it focuses on how systems create and reproduce themselves by interaction processes of their elements (Fuchs 2003c, 2008). Intersubjective interactions result in the production of emerging objective structures that enable and constrain further interactions that again allow the production and reproduction of structures, etc. Self-organizing systems are self-referential, reflexive, and self-producing.

The idea of social self-organization has thus far been mainly associated with the works of Niklas Luhmann and his concept of self-reference. For Luhmann (1993) morals are communications oriented on the binary code good/wicked; it is communication on which actions and views should be respected or disrespected. Luhmann considers morals as self-organizing and self-referential in the sense that moral communication produces follow-up moral communications, which result in further moral communications, etc. Luhmann neglects the role of human subjects and their individual value structures, the mediation of subjective and objective aspects of morals, because he excludes human actors from social systems.

For Luhmann (1993) morals do not form a specific subsystem of society, but circulate in all social systems. But morals and morality are phenomena that are clearly different from structures such as natural resources (natural systems), machines (technological systems), property (economic systems), power (political systems), etc. In order to stress the significance of morals we conceive it as a subsystem of society that is open in the sense that it is always structurally coupled to other subsystems of society. Hence one can never participate only in the moral system of society, one at the same time participates in at least one other subsystem. Hence morals are not abstract, but concrete, the coupling of the moral system with other systems results in special morals and ethics such as bioethics, environmental ethics, technological ethics, economic ethics, political ethics, media ethics, ethics of science, aesthetic ethics, educational ethics, medical ethics, sports ethics, social ethics. This structural coupling shows that the moral system is a special system in the sense that it is always connected to other subsystems of society [ecosphere, technosphere, economy, polity, culture, see Fuchs (2008)]. The moral system of society is a subsystem of the cultural subsystem of society (Fuchs 2008). All cultural systems are oriented on the production of meaning in society. Morals signify social phenomena in value-based terms (good, evil, wicked, etc.).

Our concept of the moral system of society is based on a notion of social self-organization as dynamic process, in which human actors communicate in such a way that they produce and reproduce social structures that enable and constrain further human actions and communications by which further structures emerge and are reproduced, etc. This is a self-producing, self-referential, and reflexive process that is termed re-creation (Fuchs 2003a, b, 2008).

There is a structural level and an actor level of the moral system that are mutually connected. On the actor level, we find an individual moral structure that is made up of a set of individual norms, values, and rules of behaviour.

Moral structures are made up of rules, norms, and values. Rules are techniques or procedures of action (cf. Giddens 1984, pp. 16–25), norms are regularized rules achieved by routinized, repeated, and repeatable action, values are a weighting and an evaluation of rules and/or norms according to moral judgements in terms of good and evil. These three components can be found on the individual and on the social level of the moral system. Human action is an expression of the practical realization of individual rules, norms, and values.

Based on individual morals, human beings enter social relationships and form social groups by communication processes. We enter the moral system of society when our individual or social practices are oriented on moral issues. When we

communicate with other actors about moral questions and judgements, we act on the social level of the moral system. In and through communication processes the moral social structure of society is constituted and reproduced. By moral communication, i.e. communication about moral issues, social rules, norms, and values emerge and are reproduced. Moral communication is characterized by certain degrees of conflict and co-operation. Social rules are techniques and procedures of social action, social norms are institutionalized and possibly sanctioned social rules (Giddens 1984), social values are collective moral judgments on social phenomena in terms of good and wicked. Collective morals don't necessarily require consensus.

Collective morals in a process of downward causation enable and constrain individual rules, norms, and values. This is not a mechanical deterministic process, individuals who are socialized in certain social systems (for example children educated by parents, pupils educated by teachers) are confronted with certain dominant values by other actors. How they react is not exactly determined, there is only a certain space of possibilities determined by the overall social structure, the exact individual moral judgements are chosen based on relative freedom of action.

The self-organization of the moral system is a process where individuals produce and reproduce social rules, norms, and values (moral structures) in and through communication. This results in social moral structures that enable and constrain individual rules, norms, and values that function as the foundation for further moral communication processes that result in the further emergence and reproduction of social morals, etc. (see Fig. 1).

Self-organization can on the one hand be understood on a synchronous level as the autopoietic reproduction of structures. Here the work of Maturana and Varela has been important. Ilya Prigogine has on the other hand shown that on a diachronic level self-organization means that new qualities and order emerge in a phase of instability and systemic crisis. He terms this principle order from noise.

Because of the moral system's openness new moral social structures emerge always in situations of crisis and instability of at least one subsystem of society. This means that societal crisis by the way of structural coupling has a feedback effect on the moral system by which dominant morals of the specific system change: new qualities of the moral system emerge. The changes both affect the specific system in crisis and the moral structure of society in the specific realm in question.

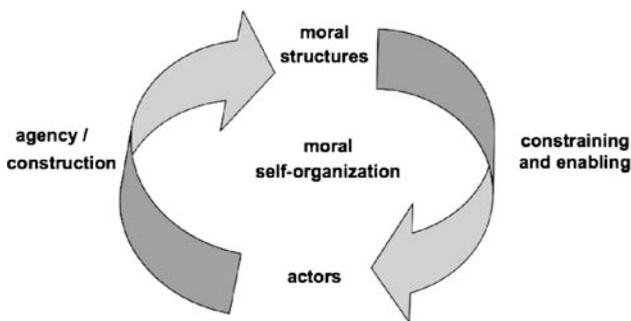


Fig. 1 The self-organization of the moral system

But this is not a deterministic process. Crisis opens up a space of possibilities for new morals which are realized in concrete social processes. The deterministic element is that morals change in situations of crisis, but it is relatively open how they change.

With the rise of modern society, religious morals increasingly have become more and more unimportant due to the role that the economy and polity play in society. Economic freedom in the sense of a right to private property and of civic liberties has become a dominant social value that shapes society. Economic liberty in modern society means that each individual has the right to produce commodities and to sell them on markets. The moral values of modern society are to a certain extent antagonistic and self-contradicting. So for example the right to private property organized in the form of capital accumulation often contradicts the human right to social security. The rise of economic competition as a dominant structural principle of modern society is due to the fact that modern society is based on capital and markets. Modern society is among other qualities characterized by conflicts of interest. The state system is a monopolization of the means of coercion that is used for installing a political system that forces the different interest groups to carry out conflicts in an unarmed way. This results in the democratic political system in which parties that are an expression of different antagonistic interests compete for the favour of citizens. This system is based on the distinction between government and opposition, majority rules, and laws. Laws are social norms defined by the government, sanctioned with the help of the state-monopoly of the means of coercion organized in the form of the executive system that consists of the police system, the military system, and the prison system and the judiciary system. Competition and conflict are the dominant principles of moral communication in modern society. Social norms and values are constituted in conflicting ways that establish power differences (that are renegotiated in election processes) that enable certain groups to pass laws and exclude others from this process. Morals can under certain circumstances become ideologies that legitimate domination by strictly regulating human action by appealing to a highest, absolute, irrational authority such as God, race, nation (Althusser 1971; Balibar and Wallerstein 1991; Gramsci 1971).

The self-organization of the moral system is a threefold process of cognition, communication, and co-operation. The cognitive level is the domain of individual rules, norms, and values, communication and co-operation are processes that form the social level of the moral system. Co-operation is a type of social relationship for achieving social integration that is different from competition. Co-operation is a specific type of communication where actors achieve a shared understanding of social phenomena, make concerted use of resources so that new systemic qualities emerge, engage in mutual learning, all actors benefit, and feel at home and comfortable in the social system that they jointly construct. We argue that co-operation is the highest principle of morality, it is the foundation of an objective dimension of ethics, ethics of co-operation. All human beings strive for happiness, social security, self-determination, self-realization, inclusion in social systems so that they can participate in decision processes, co-designing their social systems. Competition means that certain individuals and groups benefit at the expense of

others, i.e. there is an unequal access to structures of social systems. This is the dominant organizational structure of modern society, modern society hence is an excluding society. Co-operation includes people in social systems; it lets them participate in decisions and establishes a more just distribution of and access to resources. Hence co-operation is a way of achieving and realizing basic human needs. It is a way of achieving and realizing basic human needs only for certain groups and excluding others. We argue that co-operation forms the essence of human society and that competition estranges humans from their essence. One can imagine a society that functions without competition, a society without competition is still a society. One cannot imagine a society that functions without a certain degree of co-operation and social activity. A society without co-operation is not a society, it is a state of permanent warfare, egoism and mutual destruction that sooner or later destroys all human existence. If co-operation is the essence of society, then a truly human society is a co-operative society. Co-operation as the highest principle of morality is grounded in society and social activity itself: it can be rationally explained within society. For doing so, one need not refer to a highest transcendental absolute principle such as God that cannot be justified within society. Ethics of co-operation is a critique of lines of thought and arguments that want to advance exclusion and heteronomy in society. It is inherently critical: it subjects commonly accepted ideas, conventions, traditions, prejudices, and myths to critical questioning. It questions mainstream opinions and voices alternatives to them in order to avoid one-dimensional thinking and strengthen complex, dialectical, multi-dimensional thinking. The method of critique goes back to Socrates, in the twentieth century it has been advanced by approaches such as Critical Theory and Discourse Ethics.

Cyberethics of Co-operation

Norbert Wiener, Donn Parker, Joseph Weizenbaum, and Walter Maner were early pioneers of computer ethics (Bynum 2001). Maner saw computer ethics as referring to ethical problems aggravated, transformed or created by computer technology. Moor (1985) defined computer ethics as “the analysis of the nature and social impact of computer technology and the corresponding formulation and justification of policies for the ethical use of such technology” (Moor 1985, p. 23). For Richard Spinello, cyberethics is about metanorms that guide “acting well in this new realm of cyberspace” (Spinello 2003, p. 2). Computer technologies and knowledge transform society; transformation means that new questions of how social relationships should be regulated arise. New options for development, i.e. opportunities and risks, emerge. The challenge for cyberethics is to discuss principles of morality that can guide human action so that people are empowered to establish a sustainable, participatory global information society. Cyberethics can discuss real possibilities of development of the information society and criticize ideologies that portray the information society in uncritical and one-dimensional ways.

Luciano Floridi argues that computer ethics in the Information Age should take on the form of information ethics (Floridi 1999; Floridi and Sanders 2005, 2002,

2001). For him Information ethics is the philosophical foundation of computer ethics. Floridi has a pan-informational concept. He conceives information as a process and as the substance of the world. “From an IE perspective, the ethical discourse now comes to concern information as such, not just all persons, their cultivation, well-being and social interactions, not just animals, plants, their proper natural life, but also anything that exists, from paintings and books to stars and anything that may or will exist, like future generations; and anything that was but is no more, like our ancestors” (Floridi 1999, p. 43). For Floridi, the infosphere—the environment constituted by the totality of information entities—has intrinsic worthiness.

Human beings socially construct the world. We can only consider something as valuable that is part of our social universe. The problem of non-humanistic ethics that postulate values that transcend the human being and its constructed and produced world is that putting humans and nature or artificial systems on one level frequently results in a problematic devaluation of human beings (as for example in Deep Ecology). Floridi for example argues that responsible agents such as human beings, AI robots, angels, and gods have the greatest dignity. To put humans on the same level as robots is problematic, it reduces humans to the level of machines. Moral status requires the abilities of self-consciousness, sensitivity, suffering, rational judgement, and the knowledgeable, reflective, rational choosing of alternatives. Values and morals are inherently human qualities; for humans there are no values external to human and societal being, there is no position from where they could judge if something that exists outside of society has values. Humans can consider things as valuable and life-enhancing. Humans are intrinsically valuable for humans.

Floridi defines an evil action as an action of an agent that damages the welfare of another agent severely or unnecessarily (Floridi and Sanders 2001). We could agree with this definition, if the agents were considered as human individuals or groups, but Floridi argues that besides moral evil (human) and natural evil there is also artificial evil: evil actions committed by machines or computer applications. For acting in an evil manner it is necessary to be conscious or potentially conscious of the distinction of good and evil. Technologies, animals or particles are not and never will be conscious of this distinction; they are not moral creatures. Floridi anthropomorphizes technology and nature. So, for example, it is not a computer virus that destroys all data on my hard disk that is evil, but the person who programmed the application and distributed it.

Capurro (2006, 2005, 2003a, b) offers an alternative version of information ethics that is grounded in the social realm and explores and evaluates the development of moral values and new power structures in the information field, information myths, contradictions and intentionalities in information theories and practices, and the development of ethical conflicts in the information field. The main task of such ethics is for Capurro to pose the question of freedom in a digitally networked world. He sees information ethics as “problematization of behavioural norms of communication in societies shaped by mass media particularly since the second half of the last century. (...) Information ethics can be considered then as the open space where an intercultural dialogue about these issues can and should take place” (Capurro 2006, pp. 176, 184).

In computer ethics there is a debate on the question if new information- and communication technologies imply new ethics: Expansionists like Carl Mitcham and Walter Maner argue that ICTs transform society to an extent that requires a new ethical framework, traditionalists say that we can apply our ordinary scheme of ethical analysis to issues involving cybertechnology (Tavani 2005, 2001). Our argument is that both arguments are false and true. The information society is a societal formation that is both continuous and discontinuous, it is neither an entirely new society nor an entirely old society, but one structured around an asymmetrical distribution and accumulation of economic, political, and cultural capital (Fuchs 2008). The way that structures work has been transformed, but not revolutionized by the increasing importance of ICTs, knowledge, communication, and network logic. If society has partly changed, we partly need to adapt our ethics. Given such an analysis one can assume that in the information age we are still confronted with fundamental questions of ethics such as how to increase freedom, autonomy, participation, and co-operation in society, but the societal context has to a certain extent changed. Therefore the realm of possible developments of society has also changed. So the real options for action that humans have are somehow different, we need to rethink which alternative paths of development are desirable and which ones are not.

Deborah Johnson argues that computer ethics will disappear in the future because computer technology will become an ordinary phenomenon and this will result in the integration of computer ethics into ordinary ethics [Bynum (2001) refers to this assumption as the Johnson hypothesis]. Tavani (2001) argues that computer ethics will not disappear because new phenomena like bio-informatics and Artificial Intelligence would create new ethical questions. Also Moor (2001) says that “novel applications of computing will generate new policy vacuums and hence new ethical problems” (Moor 2001, p. 90). We think that the disappearance of computer ethics would only be possible if computer technology would no longer have novel effects on society. But this is unlikely to happen. So for example the rise of nanotechnology will probably have huge effects on society that have thus far only been little discussed.

That we term our approach cyberethics of co-operation stresses that co-operation is a principle that could strengthen the sustainable character of the information society and that it should be applied practically to questions of the information society, a society that is increasingly shaped by technology (cyberspace) and information. Co-operative information society ethics is a more precise term, but because of its clumsiness we prefer to speak of cyberethics of co-operation.

How has the space of possibilities of societal development changed? How has it remained unchanged? Modern society is based on an antagonism between self-determination and heteronomy, inclusion and exclusion. Co-operation is inherently inclusive, whereas competition advances exclusion and separation. Modern technologies have both advanced co-operation and competition under the premise of rationalizing the accumulation of economic, political, and cultural capital. In the information society (which might be better described by the term informational capitalism) social systems and structures are increasingly shaped by knowledge, communication, and computer-mediated communication. This has resulted in the

increasing importance of network logic and the globalization, i.e. time–space–distanciation, of social relationships. ICTs foster *networked forms of co-operation and competition* (Fuchs 2008). New electronic media that are based on digitization, networking and computer technology are immersed in and embedded into the modern antagonism between competition and co-operation. Hence they do not have clear cut, mechanically determined, one-sided effects, but result in a set of multiple antagonistic uneven economic, political, and cultural tendencies. They pose both opportunities and risks. The task of cyberethics of co-operation is to analyze the antagonisms of the information society, to question the uncritical appraisal and demonization of ICTs and the information society, and to stress the importance of the principle of co-operation for realizing sustainable development paths of the information society.

The discourse on sustainability has during the last decade shifted from its early narrow ecological confines towards including economic, social, and institutional aspects. Sustainability is a multi-dimensional concept. The goal of cyberethics of co-operation is to provide arguments that help people to strengthen practically the sustainability of society. Sustainability is based on the desire of all human beings to live in a fair, just, and beautiful society. All humans want to live a good life; if one desires the right to have a good life, one must also recognize that all humans have the right to live such a life. Hence sustainability can broadly be defined as a good life for all. Society is made up of different, interconnected subsystems: ecology, technology, economy, polity, and culture (Fuchs 2008). Sustainability is a desirable aspect that humans strive for in all of these subsystems. A sustainable society encompasses ecological diversity, technological usability, economic wealth, political participation, and cultural wisdom.

The notions of co-operation, participation, and sustainability are closely connected. What are the differences and commonalities between these concepts? Participation is structure-oriented, it is a process in which social structures are designed in such a way that individuals are included in the constitution of the social systems they live in and actually take part in these constitution processes. Co-operation is an intersubjective process within participatory structures; participation is a logical and necessary, but not sufficient precondition for co-operation. Co-operation is the social process by which sustainable systems can be produced. Sustainability concerns the long-term form and effects of a social system. Participation means the structural enablement, co-operation the intersubjective social process, sustainability the long-term condition and effects of social systems, in which all benefit and have a good life. Abstractly spoken, a participatory, co-operative, and sustainable society is a society which guarantees a good life for all (Fuchs 2010). A participatory, co-operative and sustainable information society is a society in which knowledge and technology are together with social systems shaped in such ways that humans are included in and determine their social systems collectively, interact in mutually benefiting ways, and so bring about a long-term stability that benefits all present and future generations and social groups (Fuchs 2010).

ICTs and knowledge today have effects that advance both the sustainable, co-operative, inclusive and the unsustainable, competitive, exclusive character of society. Depending on how ICTs are socially designed and applied, they can have

positive and/or negative effects on society. They can either have positive or destructive effects on the ecosystem, they can be designed in user-friendly ways or not, can be treated as free goods available to all for free or as commodities that are unequally accessed and distributed (the same is true for knowledge), can either support political participation or surveillance, can advance participatory online-media and the plurality of political information and communication or one-dimensional mass media, can foster a higher publication rate and speed in science (scientific online journals and reviews) or have, due to the increasing publication speed, negative effects on quality standards provided by the peer-review system, can put forward new forms of art (cyberart, electronic art) that involve audience-participation or have negative influences on the authenticity of artworks; they can support more co-operative or more individualized forms of learning and ethics, can foster both cultural diversity or fundamentalism, can have positive or negative effects on health and medical awareness, can advance and socialize or individualize and limit physical activity and games, and they can be helpful in advancing friendships and love or the sowing of hate (as in the case of right-wing extremists using the World Wide Web) [cf. Table 1, for a detailed discussion of these antagonism cf. Fuchs (2008)]. In all cases today ICTs and information do not either have solely positive or solely negative effects, but both positive and negative ones at the same time. There are enabling and constraining tendencies of ICTs and information in society and ecology today; it is a political task to advance and realize opportunities and to avoid risks that are related to ICTs. The task of cyberethics of co-operation is to point out the problems of the information society and to provide arguments that suggest that co-operation advances a sustainable information society.

The dimensions of sustainability do not exist independently, but are interdependent, i.e. a lack of a certain dimension eventually will have negative influences on other dimensions, whereas enrichment of one dimension will provide a positive potential for the enrichment of other dimensions. So for example people who live in poverty are likely to not show much interest in political participation. Another example is that an unsustainable ecosystem advances an unsustainable society and vice versa: If man pollutes nature and depletes non-renewable natural resources problems, i.e. if he creates an unhealthy environment, problems such as poverty, war, totalitarianism, extremism, violence, crime, etc. are more likely to occur. The other way round, a society that is shaken by poverty, war, a lack of democracy and plurality, etc. is more likely to pollute and deplete nature. So sustainability should be conceived as being based on a dialectic of ecological preservation, human-centred technology, economic equity, political freedom, and cultural wisdom. These dimensions are held together by the logic of co-operation, i.e. the notion that systems should be designed in ways that allow all involved actors to benefit. Co-operation is the unifying and binding force of a participatory, co-operative, sustainable information society; it dialectically integrates the various dimensions.

Hofkirchner and Maier-Rabler (2004) argue that society is facing a crossroads today that they term “the great bifurcation”. “In the information age social evolution can be said to approach a crossroads that allows evolution of consciousness to shift to conscious evolution. This shift is the progressive upper branch of the great bifurcation of human history and of the history of the cosmos as

Table 1 The main questions of cyberethics of co-operation

Dimension	Quality	ICT- and information-related opportunities and risks
Ecological sustainability	Biological diversity	Ecologically sustainable versus ecologically destructive ICTs
Technological sustainability	Usability	User-oriented, user-friendly, enabling versus unusable, constraining ICTs
Economic sustainability	Wealth for all	Free knowledge and ICTs versus knowledge and ICTs as commodity and private property
Political sustainability	Participation of all	Participation versus control enabled by ICTs
Cultural sustainability	Wisdom	Wisdom versus false consciousness advanced by ICTs
<i>Sustainability of:</i>		
Mass media	Wise knowledge and media	Participatory, wise online journalism versus manipulative, one-dimensional online-journalism
Science	Truth	Speed versus quality of E-science
Art	Beauty and imagination	Aura gain and participatory art versus aura and authenticity loss of works of art in cyberspace
Education	Literacy and good skills	Co-operative versus individualized e-learning
Ethics	Openness, unity in diversity of values and rights	Open versus fundamentalist cyberethics
Medicine	Health	Positive versus negative effects of ICTs on health
Sports	Fitness	Advancement/socialization versus limitation/individualization of physical activity and games
Social relationships	Love and understanding	Cyberlove versus cyberhate

well; the regressive, lower branch might decline and decay if humankind is not able to close the gap between technological and social evolution” (Hofkirchner and Maier-Rabler 2004, p. 2). An appropriate ethos for the information age values positively all actions that create favourable conditions for the advent of a global sustainable information society, inclusiveness would be its most important value. “The ethos of the Great Bifurcation is all inclusive, it is about peace, respect for nature and justice (solidarity, freedom, equality)” (Hofkirchner and Maier-Rabler 2004, p. 5). Inclusiveness is an important goal, but we would like to add that the process for achieving inclusiveness is co-operation. Hence an appropriate ethics for a global sustainable information society is best termed cyberethics of co-operation.

Cyberethics of co-operation is closely related to what Andrew Feenberg has termed a critical theory of technology. He argues that a critical theory of technology identifies contradictions that arise from the application of technologies: “Critical theory argues that technology is not a thing in the ordinary sense of the term, but an ‘ambivalent’ process of development suspended between different possibilities. This ambivalence of technology is distinguished from neutrality by the role it attributes to social values in the design, and not merely the use of technical systems. On this view, technology is not a destiny but a scene of struggle. It is a social battlefield, or perhaps a better metaphor would be a ‘parliament of things’ in which

civilizational alternatives contend. (...) Critical theory holds that there can be at least two different modern civilizations based on different paths of technical development. (...) Technologies corresponding to different civilizations this coexist uneasily within our society” (Feenberg 2002, p. 15).

Critical studies/theory of ICTs and society can be conceived as studies that identify and analyze antagonisms in the relationship of ICTs and society. They shows how ICTs are shaped by and shape the colliding forces of competition and co-operation, are oriented on showing how domination and exploitation are structured and structuring ICTs and on how class formation and potential class struggles are technologically mediated. They identify ICT-supported not-yet realized potentials of societal development and radically question structures that restrain human and societal potentials for co-operation, self-determination, participation, happiness, and self-management.

The central conflicts and struggles of modern society (on property, power, and skills) have been transformed in the information age. Knowledge is a strategic resource in these struggles. One task for cyberethics of co-operation is to provide arguments that help people in strengthening the character of cyberspace as a system for political communication and co-operation and to criticize attitudes and practices that deepen existing social problems or create new ones. Cyberethics of co-operation is a form of objective ethics in the sense that it tries to rationally ground the idea that co-operation is a superior form of social relationship to competition. It is subjective in the sense that it is oriented on human practices in social struggles: Co-operation as the essence of society is an objective possibility in the form of a co-operative society, contemporary capitalist society means an estrangement of society from its own essence. Establishing a co-operative society, in which essence and existence of society correspond, requires that humans struggle for such a society.

Conclusion

Cyberspace is embedded into societal structures that do not result in an entirely new society, but also do not leave society unchanged. Old questions such as the conflict between co-operation and competition that appears in modern society in the form of conflicts on property, power, and symbols take on a new form. Cyberspace raises new questions such as the status of information as public or private property and its potential for strengthening democracy and enabling new forms of surveillance that threaten privacy. The task for cyberethics of co-operation is to point out the real possibilities for strengthening societal co-operation and the co-operative character of cyberspace in the information age and to criticize approaches and arguments that advance the competitive character of society and cyberspace. It rests on the principle that co-operation enables forms of social life that are more fulfilling, self-enhancing, democratic, inclusive, and participatory than the ones brought about by competition. To provide arguments that show the superiority of co-operation over competition is one of the central tasks of ethics in the information age. A sustainable information society, i.e. a society that guarantees a good life for all, will be a co-operative society.

On the one hand phenomena such as cyberterrorism, information warfare, cyberhate, e-commerce, virtual markets, electronic surveillance, cybercrime, digital divides, etc. show that competition in various forms is one aspect of cyberspace. On the other hand phenomena such as Wikipedia, social software, wikis, computer supported co-operative work, weblogs, online social networking, online friendships, cyberlove, digital democracy, alternative online media, filesharing, open source software, open content platforms, etc. indicate that also different forms of co-operation play a role in cyberspace. We have argued in the paper at hand that an antagonism between competition and co-operation is at the heart of the information society, i.e. there are no clear-cut one-dimensional effects of new technologies on contemporary society, but multiple, complex, non-linear effects that contradict each other and have potentials to both advance co-operation and competition. For each potential competitive effect there is a counter-running co-operative effect. As we consider co-operation more desirable as competition, we suggest as a principle of morality in the information society that co-operative effects should be advanced and competitive ones avoided. Co-operation is an inherent potential of new technologies because of their networking effects.

Co-operation is based on an inclusive logic that establishes social systems, in which all involved actors and groups benefit. The logic of co-operation is the binding force of a progressive society that connects its various dimensions. Participation means the structural enablement, co-operation the intersubjective social process, sustainability the long-term condition and effects of social systems and a society, in which all benefit. A co-operative, participatory, sustainable information society is an alternative to transnational informational capitalism that has caused culminating societal problems that need to be solved if society wants to survive in the long-run.

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