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The Internet and "Frictionless Capitalism"

Jens Schröter

Universität Siegen. Siegen, Germany. schroeter@medienwissenschaft.uni-siegen.de
http://www.multimediale-systeme.de

Abstract: *Since 1994 when the first browsers made their appearance the internet became the ‚new medium' par excellence. As is always the case with new media, there was an intense discussion about the future usage and effects of the new technology. One of the central arguments of this discussion was that the new medium might solve the problems of capitalism – Bill Gates coined the phrase ‚frictionless capitalism'. In the first part of my paper some of these discourses are analyzed. These discourses, often publicly uttered by conservative and liberal politicians, try to construct the internet as commercial medium solving problems of late capitalism. But already the dotcom-crash 2001 hinted at problems with that construction. In the second part there is a discussion of a special interpretation of Marx' theory of capitalist crisis. It is argued – also with recourse to Norbert Wiener – that the internet is part of the third industrial revolution which might lead to a very deep and even terminal crisis of capitalism. Instead of solving the problems of capitalism the internet might deepen them. We are witnessing since 2008 a chain of ever increasing symptoms of a deep crisis. By using Marx' approach some of the important effects of the new medium can be described far more accurately than does the unreflected euphoria of Gates and others.*

Keywords: Commercialization, Crisis, Gates, Internet, Marx, Gates, Productive Forces, Relations of Production

1. Introduction

Following 1989/90, hardly any "new media" gained as much importance as the internet did – on two parallel levels simultaneously: firstly, the internet became and remains the central vehicle of transnational economy, and secondly, the new technology became the focus of practically mythic tales: "Hardly had the social utopia been banished than the bourgeois media began to revel in unsocial technical utopias" (Haug 2003, 68; cf. Mosco 2004; Schröter 2004a; Flichy 2007). After the Cold War between Eastern Stalinism and Western capitalism, it seemed the next stage of history would be the solution to all problems, a capitalism rendered "frictionless" (Bill Gates) by the internet – for capitalism up to that point was apparently still full of friction, despite all assertions to the contrary.

As early as 1981, Lyotard had observed that "[e]ven capitalism, the liberal or neo-liberal discourse [...] ha[s] little credibility in the contemporary situation", for "it no longer knows how to legitimate itself." However, capitalism can exploit "information technologies" in order to achieve "the computerization of all of society [...]. That is today's capitalist horizon; and it is clear this will be what brings capitalism out of the crisis" (Lyotard 1986, 210). Lyotard takes completely for granted that information technologies will be able to solve the diagnosed crisis – rather than exacerbating it.

However, at this time "the internet" as such did not yet exist, only some of its predecessor networks which were hardly used by corporations. The *Arpanet*, the Internet's predecessor, resulted from the overlapping of military (communication that would still function in case of a thermonuclear war) and academic (sharing computer resources, which were scant at this time) discursive practices. For a long time, it was seen emphatically as a non-commercial, non-economic medium (cf. Abbate 1999; Schröter 2004a, 20-148). Only in the 1990s did the net become more widely used, particularly following the 1991 lifting of the ban on commercial activity and opening of the WWW in 1994. And today, in 2011, it literally seems to have become the "net of the world market" (Marx 1991, p929).

The Internet is a prime example of how technologies do not automatically bring about social change on their own, but how they are "redesignated" by hegemonic discursive practices[1] – a capitalism dominated by "neoliberalism" from 1973 onwards, but especially so since 1989/90. Hence,

[1] On the concept of hegemony, cf. Laclau & Mouffe (1985).

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neither the conditions of production nor the forces of production can be considered the individual cause; rather, the cause is always to be found in their complex interaction. Thus "transnational business", the growing trend to outsource whole sections of companies, was accelerated or indeed only made possible by the net, itself increasingly incorporated into hegemonic capitalist discourse: "The local, organisational, institutional and legal *unity* hitherto covered by the term 'business' is now *disintegrated*, *dismantled* and *dispersed*. Business is now only a virtual entity [...]" (Kurz 2005, 88). Precisely this "molecularisation" of business units can only function due to an "immediate global flow of information in real time" (ibid., 89). It is possible to enumerate many further levels on which the internet slotted into the structures of neoliberalist capitalism, thus enabling its global dislocation in the first place: for example, how email communication renders individuals permanently available, how new forms of teleworking and ostensible self-employment are made possible, how new distribution channels are opened up, and above all, how the gigantic and de-substantialised finance sector was only able to grow to this extent because of data networks (cf. ibid., 220-298). This complex process is of course not without its contradictions, but its various aspects cannot be considered in detail here (cf. Dyer-Witheford 1999; Haug 2003, 67-96).

Rather, the question arises of whether the net does not paradoxically *also constitute* the prime example of the "revolt of modern productive forces against modern conditions of production" (Engels and Marx 2009, 10). To put this another way: the internet could be an example of how hegemonic capitalist discourse attempts to transform a new, initially underdetermined technology into a hegemonic operational technology, but finds itself limited precisely by this attempt, for the "true barrier to capitalist production is capital itself" (Marx 2006, 358). To put this yet another way: the initial euphoria over the web's potential – still present in the capitalist periphery where the internet is still spreading, as Alzouma (2011) shows using the example of Niger – and the related (attempted) sedimentation of hegemonic structures in it can also be frustrated by the net. And this is not due to the fact that there are "resistant" subcultures on the web, as will be shown later, but precisely because of the web's "success". There are hegemonic "adjustments" ("Zurechtmachungen", in Nietzsche's original German) of new media, but there is no guarantee that they will develop as originally anticipated.

The following section will outline some parts of the discourse on the Internet that developed during the 1990s. We are concerned in particular with those arguments that, hardly had the "user-friendly" *World Wide Web* platform become popular, sought to transform the Internet into a medium of the global neoliberal economy.

2. Frictionless Capitalism

The Internet was only cleared for commercial activity in 1991, and soon afterwards began to expand rapidly due to the spread of the WWW and browsers after 1994. Politics reacted quickly. As early as 1994, the U.S. Vice-President Al Gore gave his speech *Building the Information Superhighway*, in which he coined the metaphor of the *information superhighway*. Gore invokes the utopian model of the "universal archive" that developed alongside the earliest forms of the internet: "We now have a huge quantity of information available with respect to any conceivable problem that is presented" (1994). And as the Vice-President makes abundantly clear, this information should be placed primarily at the disposal of "business people" so that they can succeed in their tasks. However, the problem is how to find one's way around this vast mass of information: "As we confront this huge quantity of information, we see the appearance of these new devices that can sort through it quickly, organize it, and apply it". These "new devices" are of course none other than the personal computers that spread rapidly from the beginning of the 90s. They are able to provide valuable services in economic problem-solving, as they do in politics: "Probably 90 percent of the work I do when I'm in my office in the West Wing of the White House is on a computer terminal." But in order for all of this information to be available, the machines need to be connected. Gore stresses that the development of the *National Information Infrastructure* is mainly the task of private

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enterprise – despite the fact that the development of data networks was primarily supported by the military and universities, and thus at least partly by public funds.

Naturally, Europe did not want to lag behind the USA. The "Bangemann Report" titled *Europe and the Global Information Society* hurriedly composed by the EU Commission only refers back to Gore's transport metaphor in passing, but sounds even more optimistic: "The information society has the potential to improve the quality of life of Europe's citizens, the efficiency of our social and economic organisation and to reinforce cohesion" (Bangemann et al. 1998, 7). Five years after the collapse of the Eastern Bloc, against which the West always *held together*, networks are perceived not only as a new means of creating social cohesion, but also as a way of increasing productivity. However: "There is a danger that individuals will reject the new information culture and its instruments" (ibid., 7). Despite frequently invoking "pluralism" (ibid., 19), the report appears to consider dissenters prone to "rigidity, inertia and compartmentalisation [sic!]" unacceptable – a "great deal of effort must be put into securing widespread public acceptance and actual use of the new technology" (ibid., 7). For the "market-driven revolution" – similarly to Al Gore, a market-ideological repression of the highly subsidised nature of data network development by universities and the military is conspicuous here – demands and encourages "full competition", from which the tautological inference follows: "Since information infrastructures are borderless in an open market environment, the information society has an essentially global dimension" (ibid., 12, 16). The a priori assumption is a global market, which the new medium is to cosy up to and serve. And so these programmatic statements continued – and indeed consequently so for programmable machines such as networked computers.[2]

The *Magna Charta for the Knowledge Age* was published in 1994. This manifesto of the conservative thinkers centred around Newt Gingrich repeatedly demands "universal access" to cyberspace, the "bioelectric environment that is literally universal" (Dyson et al. 1994, 27). Although – with blatant disregard for large parts of the earth – it proclaims that "[t]oday we have, in effect, universal access to personal computing" (ibid., 33-34), on the other hand it states: "Creating the conditions for universal access to interactive multimedia will require a fundamental rethinking of government policy" (ibid., 34). It is evident from the contradiction between the statement that everyone is already networked and the demand that everyone should be networked that the *Charta* has no clear concept of or policy on the information society. Rather, this manifesto – in line with the changing role of the state in the transition to neoliberal capitalism (cf. Kurz 1999, 642-667) – is full of classical liberalism simply dressed up in new costumes. The mantra-like demand is for a "cyberspace marketplace" (Dyson et al. 1994, 31), free from all (social) state constraints, that everyone will supposedly have access to: due to their scepticism towards government, the authors reject the metaphor of the information superhighway - the building of highways frequently being a state matter. The utopia of universal accessibility implied in the *Magna Charta* by no means refers to information as such, but to marketable information.

The manifesto states: "The meaning of freedom, structures of self-government, definition of property, nature of competition, conditions for cooperation, sense of community and nature of progress will each be redefined for the Knowledge Age" (ibid., 26-27). Due to pressure from digital media, these terms require redefinition: phenomena such as the (former) music file sharing service *Napster* or even the simple copying of music CDs with commercially available CD burners show that the traditional notion of intellectual property or copyright ("definition of property") is in danger of being undermined by the digital code and its potentials for reproduction. As the authors themselves write: "Information [...] can be replicated at almost no cost – so every individual can (in theory) con-

[2] Discussing the question of whether and how hegemonic discursive practices are inscribed in technologies and thus try to operationalise them is particularly relevant in the case of computers, as this technology is by definition open and programmable, waiting like a sponge to soak up discursive practices in the form of programmes; cf. Schröter (2004a, 7-17, 279-292; 2005). This pro-gramming process has nothing in common with the simple, unsustainable instrumentalism advocated by Kellner (2004) in regard to the "information superhighway".

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sume society's entire output" (ibid., p. 28). However, in order to prevent this theory becoming reality, the authors of the *Magna Charta* fall back upon a more traditional definition of property and demand decisive action on the part of the state that is otherwise much maligned in neoliberal discourse: "Clear and enforceable property rights are essential for markets to work. Defining them is a central function of government" (ibid., 29). The use of digital Internet technology on file sharing sites such as *Napster* has since been curtailed by policing so that compatibility with the imperatives of the music industry ("clear and enforceable property rights") is ensured[3]. This example in particular shows clearly that effort at least is always made to shape new media and the new ways they are used to existing social structures – with police force if needs be[4]. In this sense it is simply absurd and cynical to persist in talking of a "digital revolution"[5] – for the term "revolution", whether for better or for worse, has always been historically connected to the idea of changing existing social structures.

In any case, proclamations of the new perspectives of the Knowledge Age and the supposedly upcoming "knowledge society" that have proliferated since the 1990s simply repeat familiar neoliberal demands: withdrawal of the state, expansion of a market "characterized by dynamic competition consisting of easy access and low barriers to entry" (ibid., 30) resulting – as the constant insistence on "universal access" suggests – in *compulsory* participation in the market. The point however is that cyberspace (only four years after having been opened up to commercial exchange) is seen as the "prototypical competitive market" (ibid., 34) ultimately promising one thing: "the renaissance of American business and technological leadership" (ibid., 30). This kind of cyber-libertarianism with its concurrent anti-state impulses has also become known under the catchphrase "Californian ideology" (cf. Barbrook and Cameron 1995). John Perry Barlow's *Declaration of the Independence of Cyberspace* (cf. Barlow 1996) is informed by the same ideology. It is based on Jefferson's Declaration of Independence of the USA and similarly rejects any state interference in cyberspace – even though without explicit reference to a liberal understanding of the market[6].

Nearly all of the texts mentioned here demand a reduction of monopolies, which seems absurd considering the role played by *Intel* and particularly *Microsoft* in today's computer market. Bill Gates, the founder and former CEO of *Microsoft*, rejects the metaphor of the information superhighway, as the "real problem of the highway metaphor is that is emphasizes the infrastructure rather than its applications" (Gates 1996, 6). However, the reference to applications shows that presumably Gates rejects the metaphor mainly because it is not commercial enough. Gates's writing reveals a notion that can only be termed utopian: "The interactive network will be the ultimate market" (ibid.). He goes on to explain:

> *[I]f every buyer knew every seller's price and every seller knew what every buyer was willing to pay, then everyone in the 'market' would be able to make fully informed decisions and society's resources would be distributed evenly. To date we haven't achieved Smith's[7] ideal because would-be buyers and would-be sellers hardly ever have complete information [...] The Internet will extend the electronic marketplace and become the ultimate go-between, the universal middleman [...] It will be a shopper's heaven* (ibid., 180-181).

That is to say that the universal communication between buyers and sellers made possible by the internet and the universal access that home PCs give to all ranges of goods will prevent that partic-

[3] The portal still exists (www.napster.com), but the free sharing of music files is no longer possible.

[4] Or with massive threats and intimidation – as evident in the respective poster, cinema and television campaigns. These function like instruction manuals, driving home a conservative usage of data networks, that is to say a usage compatible with capitalism.

[5] As, for example, in pseudo-futurological works of propaganda such as Tapscott (1996).

[6] With the exception that "the wealth of our marketplaces" in cyberspace is referred to, which appears to assume an understanding of the internet as a market.

[7] Gates is here referring to Adam Smith, one of the masterminds of market economy.

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ipants in the market have only "imperfect and limited information" (ibid., 180). Universal communication and access results in "broad, efficient competition" (ibid., 205; on the history of the fantasy of "universal communication" and "universal access", cf. Schröter 2004a). This is how the market can finally develop fully (Gates's real-life models are the stock markets as "healthy [...] electronic markets" – as if there were no such things as crashes...). This universal competition has several components: thus Gates repeatedly mentions the attention (cf. ibid., 197, 211, 216, 224 etc.) a product must be able to command from potential customers on the internet. Then Gates emphasises the possibilities for radically individualised advertising and production opened up by the net: besides a (somewhat oxymoronic) individual newspaper, it is the individual tailoring of clothes that seems to hold particular appeal for him. If everyone could "indicate [their] measurements" (ibid., 189) electronically, customised tailoring via the internet would become possible. His shopper's heaven is defined more clearly:

> *At a growing number of [Levi Strauss & Co.] outlets, customers pay about $10 extra to have jeans made to their exact specification – any of 8,448 different combinations of hip, waist, inseam, and rise measurements and styles.* (ibid., 189)

It is a strange idea of "freedom" that consists of a choice between 8,448 nearly identical alternatives, without it being clear how an overview of this amount of choice is to be achieved (cf. Schröter 2004b). This kind of concept is a perfect "fit" for the WWW, the main problem of which lies precisely in its lack of link directories and compacting mechanisms, presenting the user with a vast quantity of possible information, a quantity often lauded as proof of its plurality of opinions and wealth of information. However, "a search that brings up 12,000 results has delivered not wealth, but white noise" (Winkler, 1997, p. 176). As is well known, search engines provided a historical solution to this problem (cf. Haigh 2008; see Mager 2011 for an analysis that shows the capitalist construction of search engines).

Moreover, Gates's text reveals a disconcerting shift. The main focus is no longer upon how users can access market-based information, but how advertising and production can access customers in their turn. Consumers are not only supposed to register their measurements electronically – rather, Gates formulates the long-term objective that "software agents" will be able to commercialise the subconscious also:

> *The questionnaire might include all sorts of images in an effort to draw subtle reactions out of you. Your agent might make the process fun by giving you feedback on how you compare with other people* (Gates 1996, 191).

This totalitarian order – including driving home "how you compare" with others, i.e. what counts as standard – enables a huge rise in consumption efficiency; the PC serves as an efficiency machine not just in terms of Al Gore's work, but also in terms of buying – indeed, it seems possible to suggest products to consumers that they themselves do not (yet) know they want.

This "techno-eschatology" combines "free-market visions of endless expansion, and an abiding faith in technology" (Dery 1996, 8, 10). It is possible to enumerate countless further similar web manifestos: thus Dertouzos (1997, 9) also writes: "It seemed natural and inevitable to me that the future world of computers and networks would be just like the Athens flea market – only instead of physical goods, the commodities would be information goods".

In all of the texts discussed here, barriers are broken, global expansion (of markets) is predicted, and limitless, universal competition and concurrent unlimited access to the internet is not only demanded, but more or less commanded – often in the name of an anonymous "we" or "us". This seems to blend in perfectly with the structure of the WWW: "Internet protocol enables almost unlimited expansion and thus accommodates the pressure of capital to accumulate and expand" (Altvater 1998, 60; cf. Schiller 1999).

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And thus, around 1999, a new magic word dreamed up around the mid-1990s began to circulate: *New Economy*. The constant conjuration of the Internet as the medium of a new capitalism seemed to have reached its goal. As if from nowhere, the shares of dot.com start-ups shot sky high, and the internet seemed to have become a veritable money-making machine. However, as it is well known, this bubble soon burst with a loud bang.

3. The Productive Force of the Internet and the Conditions of Production

Discussions dating from the 1990s (of which there are only few examples) reveal the programme for programmable machines and the way they are networked. They are to serve the complete and utter expansion of capitalism to every corner of the world, including individual subjects' inner selves. With the advent of *eBay*, every flat becomes part of the global market, and every private homepage creates a shop window for marketing one's own self. Paul Treanor remarked quite early on that the neoliberal discourse on the internet proliferating during the 1990s had totalitarian characteristics:

> *This logic says in effect: 'no one is free to stay outside the free market'. [...] Net-ism does not want a choice: it wants the Net, one Net, one global Net, one Net everywhere, one universal cyberspace, and nothing less. It seems that, as with the ideology of the free market (and as with liberalism in general), no co-existence is possible with the Net* (Treanor 1996).

But as has already been suggested several times, there are reasons to doubt – following Marx – whether this rededication and readjustment of the internet is in fact really *frictionless*. The burst of the *New Economy* bubble already indicates this.

It appears as if the spread of digital media, the "third industrial revolution", is actually conflicting with capitalism – as suggested by the legal and police disputes over file sharing sites such as *Napster* and other phenomena such as CD burning, illegal sharing of films etc.[8] Intimations of this sort are already to be found in one of the sources of today's digital media culture. In his 1948 book on cybernetics, Norbert Wiener wrote of the coming potential of the "ultra-rapid computing machines":

> *The automatic factory and the assembly line without human agents are only so far ahead of us as is limited by our willingness to put such a degree of effort into their engineering as was spent, for example, in the development of the technique of radar in the Second World War. [...] It may very well be a good thing for humanity to have the machine remove from it the need of menial and disagreeable tasks, or it may not. [...] It cannot be good for these new potentialities to be assessed in the terms of the open market [...] There is no rate of pay at which a United States pick-and-shovel laborer can live which is low enough to compete with the work of a steam shovel as an excavator. The modern industrial revolution is similarly bound to devalue the human brain, at least in its simpler and more routine decisions. [...] [T]aking the second [industrial] revolution as accomplished, the average human of mediocre attainments or less has nothing to sell that is worth anyone's money to buy* (Wiener 1961, 26-28).

In his 1964 classic of media theory *Understanding Media*, Marshall McLuhan complained of the "folly of alarm about unemployment" (McLuhan 2003, 464). Sixteen years earlier, Wiener apparently already was aware that the third (he calls it the second) industrial revolution would result in a large-scale rationalisation of workplaces due to cost-cutting competition – McLuhan himself calls it "intensity and competition" (McLuhan 2003, 136). And one hundred years earlier than McLuhan, Marx also knew this: for when a person only behaves as "a watchman and regulator to the production process", then (for most people at least) "labour [...] cease[s] to be the great well-spring of

[8] Cf. Hartmut Winkler, who states: "One is almost reminded of the Marxist contradiction between productive forces and the conditions of production: the technical potential of technical reproduction and its societal constitution – copyright – are directly opposed to one another" (Winkler 2004, 29). See also Kurz (2007) for a polemic, but detailed discussion if digital products disrupt the commodity form.

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wealth". The less production depends on "direct labour time spent" than on "the general state of science and on the progress of technology", the more "production based on exchange value breaks down" (Marx 2005, 705). This goes for example for industrial robots that have made millions of workers redundant, from the car industry to the fully automated video rental store. The current much lamented mass unemployment, which is still growing in spite of continually sinking real wages and has resulted in a sluggish domestic market, is a direct consequence of this. Even the supposedly up and coming "service society", "information society" or "knowledge society"[9] cannot be the solution, for it is in this sector in particular – and here we return to the internet – that work can be made redundant by digital technology: *online*, one can buy train and plane tickets, books, CDs, clothing, wallpaper, wardrobes (see *eBay*) and so forth; one can bank, search through numerous archives and even get hold of the wine tasted in the shop round the corner at a cheaper price. Countless salespeople and advisors thus also become superfluous:

> *In the same way that production work was thinned out or completely abolished by industrial robots, office work and services are now being thinned out or abolished by the internet. The first wave or stage of the microelectronic revolution had already made far more of the workforce redundant than the capitalist exploitation process could reabsorb by lowering the cost of products and the market expansion thus made possible. If the compensatory mechanism in the capitalist development of productive forces of earlier [industrial] revolutions was no longer effective during the first stage of the microelectronic revolution, it is even less so during its second, internet-determined stage. The result can only be further, significant growth in structural mass unemployment: in the Federal Republic of Germany, there will simply then be eight or ten million unemployed instead of four million* (Kurz 2000).

And when the RFID chips currently hailed as the newest great achievement network products in supermarkets, warehouses and so on, then most warehouse and supermarket workers will end up on the street (and this, rather than data protection, is the new chip's real problem).[10] Around 2005, the world's largest 200 businesses encompassed more than 25% of global economic activity, but were only able to employ 0.75% of humanity (cf. Kurz 2005, 81). Even though simulation, automatisation and networking cause productive forces' potential to soar, more and more people seem to be excluded from the cycle of work[11] – earning money – consumption, which in the end plunges the entire structure of the market economy into crisis. For those who do not work do not consume and do not pay taxes[12], meaning that neither can the products generated be sold (leading to a crisis of

[9] Marx already knew that science and technology have caused "general social knowledge [to] become a *direct force of production*" (Marx 2005, 706) – however, this debate is in precisely that section of the *Grundrisse* concerned with the "contradiction between the foundation of bourgeois production (value as measure) and its development. Machines etc." (ibid., 704).

[10] Cf. the online RFID journal as the richest source of information: http://www.rfidjournal.com, retrieved November 9, 2011. The best introduction to this technology and the possibilities it offers is an article under the following link: http://www.rfidjournal.com/article/articleview/1339/1/129/, retrieved November 9, 2011. Here it states explicitly: "Some auto-ID technologies, such as bar code systems, often require a person to manually scan a label or tag to capture the data. RFID is designed to enable readers to capture data on tags and transmit it to a computer system – without needing a person to be involved". Another job lost!

[11] This argument has been criticized. There has been a discussion around the so-called ‚productivity paradox' (f.E. Brynjolfsson 1992): It seemed as if the increasing use of computers didn't increase productivity and so didn't erase work (for critiques of this position see some of the contributions in Wilcocks AND Lester 1999 and Trenkle 2011). But even some of the most passionate advocates of this argument, f.E. Erik Brynjolfsson, have to admit in a recent publication with the telling title 'Race against the Machine' (Brynjolfsson and McAfee 2011) that digital technology is erasing work and therefore leads to serious problems for economic reproduction. Of course affirmative writers like Brynjolfsson come not even close to the insight that capitalism and digital technology might not be compatible – and it's absurd that he and his co-author praise their insight that digital technology might erase work as a new discovery (see the quote in Brokaw 2011: "But there has been relatively little talk about role of acceleration of technology"), as if there hadn't been the whole Marxian discussion or at the least the work of Jeremy Rifkin (1995).

[12] Not to mention the transnational molecularised businesses granted tax cuts due to frantic location competition (cf. Kurz 2005, 135-144). When speaking about global economy one point has to be made: One reviewer of this text asked: "How

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the domestic market), nor can the state responsible for the legal, education-political etc. framework of the market continue to function – the ever deeper debt of a lots of European states are common knowledge. Consumers, who lose their jobs or have to do mini-jobs, take credits to maintain their standard of living. At the same time businesses are forced to go into debt in order to keep up with increasingly rapid leaps in productivity. The consumers, the state and the businesses need credits. The parallelism between the spread of digital technology, increasing structural mass unemployment and the inflation of the (credit-based) financial markets is surely no coincidence – rather, it is a sure sign of the conflict between capitalist conditions of production and digital or networked forces of production.

The obvious counterargument that new technologies create new industries and new jobs (if only for the people delivering the products ordered on *eBay*) unfortunately does not hold water. At present, far fewer new jobs are being created (and if so, they are often only in the precarious low-pay sector) than are being cut.

Thus digital technologies by no means lead to "frictionless capitalism" and the "ultimate market" (Bill Gates); rather, they cause the market economy currently considered our only option to function less and less efficiently (Kurz takes a particularly strong position on this, cf. Kurz 1999, 602-780; see also Ortlieb 2008; Haug 2003, 293 is slightly more cautious when stating that "high-technology with the computer as its leading productive force has pushed [capitalism] to its limits"; cf. also Rifkin 1995). Thus it may come to a "conflict [...] between the material development of production and its social form" (Marx 2006, 1024). This shows that Marx speaks neither of technological[13] nor social determinism – instead, he is concerned with the relationship between the technological forces of production and social form:

> *At a certain stage of their development, the material productive forces of society come into conflict with the existing relations of production [...] From forms of development of the forces of production these relations turn into their fetters. Then comes the period of social revolution.* (Marx 1904, 12)[14].

This is the real meaning of the catchphrase "digital revolution", one that usually remains unconscious. The leading thinker on cybernetics Norbert Wiener seems already to have anticipated this:

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does uneven development fit the conclusions drawn from the work of Wiener and Marx?" If I understand correctly the question was directed at the Chinese growth, without which the global crisis would be even deeper. This implies that China proves that capitalism is still working well, at least in some parts of the world. Doesn't the growth rate of Chine prove this? This question is interesting, but to answer it in detail there is not enough space here (especially because this is not the central topic of this essay). But to give a short answer: Chinas seeming "successes" are in no way a counterargument to the diagnosis of (perhaps terminal) capitalist crisis (see Kurz 2005, 180-186; see the short comments on China in Kurz 2010). On the contrary: Chinas growth is completely dependent on the fictive capital generated by credits (mostly) in the US. The Chinese economy is completely oriented on export (mostly) in the US. When the credit-chains in the US collapse the Chinese growth will end – not to mention the disruptive social problems. We will witness the end of Chinese growth, the contraction of their economy and the following serious problems just in a few years from now. The first symptoms are already visible.

[13] Even though it occasionally sounds like this in Marx's writing, for example when he writes: "Social relations are closely bound up with productive forces. In gaining new productive forces, human beings change their methods of production, and by changing their methods of production, the way they earn their living, they change all of their social conditions. The hand-mill gives you society with the feudal lord; the steam-mill society with the industrial capitalist" (Marx 2009, pp. 48-49).

[14] In Castoriadis' brilliant discussion of Marx, this particular aspect of Marxian analysis appears to have been misinterpreted. Castoriadis states that Marx accuses the capitalist conditions of production of "a slow-down in the development of the productive forces", while this has actually "instead accelerated in proportions that were unimaginable in an earlier time" (Castoriadis 1998, 15). While the ideological whips of the overdue modernisation in the former Eastern Bloc did in fact assert that their so-called "socialism" liberated the development of the productive forces, Marx's point – particularly in the *Grundrisse* – is that capitalism develops the forces of production to an inconceivable extent and that *precisely that* limits it – for this development does away with the work that accumulation of value is based upon. The *Communist Manifesto* states: "Modern bourgeois society with its relations of production, of exchange and of property, a society that has conjured up such gigantic means of production and of exchange, is like the sorcerer who is no longer able to control the powers of the nether world whom he has called up by his spells" (Marx and Engels 2009, 10). This does not sound like a slowing down of productive forces by the conditions of production, rather the latter have been forced into a tight spot by the former.

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"The answer, of course, is to have a society based on human values other than buying and selling" (Wiener 1961, 28).

It is surprising that the conflict Wiener anticipates between the potential of computer technology and the capitalist social form of reproduction makes no appearance at all in the current debate on cybernetics in media studies (cf. Bergermann 2004) – despite the fact that this conflict is the *crucial* effect of the programmable technologies connected to the science of cybernetics. It seems as if the analysis of media and communication would benefit a lot from re-reading Marx (see Mosco 2009). For example, Claus Pias writes:

> *For the – definitely problematic – theory of non-deterministic teleology carries huge political implications that impinge not only upon ideas of how a society where cybernetic technologies have been installed is able to bring itself into the desired form more or less on its own (though by which means is unclear) and stabilise itself in that form. [...] Cybernetic compositions are able to capture every aberration and render deviant unrest productive for their purposes. Cybernetics is a government that thrives on disturbance and permanent crisis, for this is how it stabilises itself* (Pias 2004, 323, 325).

The possibility that cybernetic compositions, their knowledge and the digital media connected to them could actually have a *destabilising* effect on the market-based form of Pias's underdetermined notion of 'society' is not taken into consideration, similarly to Lyotard's *grand récit* of 1981.[15] In contradiction to Wiener, the "redundancy of utopia" (Pias, 2004, p. 325) can only be diagnosed if one is not yet affected by this destabilisation. Since 2008, we seem to have been experiencing it more clearly than ever.

4. Short Conclusion

It is interesting that after the year 2000 we witnessed a little bit of history repeating. At the end of the 1990s Gates' optimistic notion of 'frictionless capitalism' was ridiculed by the subsequent collapse of the dot-com-crash. Before the crisis beginning of 2008 there was a similar optimistic discourse, this time on the 'Web 2.0' (see Leister and Röhle 2011 for critical analyses of the optimistic discourses around *Facebook*). Again it seemed that the new internet applications, the 'social media', could be the source of new kinds of work, value and wealth. But this didn't work – despite all the usages of social media as new technologies of control, discipline and the commercialization of the unconscious (see Fuchs 2010a; 2010b; 2011). Perhaps this shows again that digital media are not compatible with capitalism and that there is no way to make them compatible. Perhaps they are simply – with Marx – the productive forces that clash with the relations of production. This does of course not lead by itself to a new post-capitalist form of society, but it seems to heighten the awareness that something has to be done.

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[15] Pias does admit, however, that cybermetics might be "definitely problematic". Pircher only mentions that "in Western market economies automatisation was perceived as a threat" (2004, 93) – even though it was not just "perceived" as such, but actually was and is a threat to many jobs.

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About the Author

Jens Schröter

Jens Schröter, Prof. Dr. phil., is professor for the theory and practice of multimedial systems at the University of Siegen. He is director of the graduate school “Locating Media”, see: http://www.uni-siegen.de/locatingmedia/. He is (together with Prof. Dr. Lorenz Engell, Weimar) director of the research project “TV Series as Reflection and Projection of Change”, see: http://www.mediatisiertewelten.de/en/projects/tv-series-as-reflection-and-projection-of-change/. Main research topics are: Theory and history of digital media, theory and history of photography, theory and history of three-dimensional images, intermediality, copy protection. Recent publications: Editor [with Joachim Paech]: *Intermedialität analog/digital. Theorien, Methoden, Analysen*, München: Fink 2008; Editor [with Albert Kümmel]: *Äther. Ein Medium der Moderne*, Bielefeld: Transcript 2008; Editor [with Manfred Bogen und Roland Kuck]: *Virtuelle Welten als Basistechnologie von Kunst und Kultur? Eine Bestandsaufnahme*, Bielefeld: Transcript 2009; Editor [with Gundolf Winter und Joanna Barck]: *Das Raumbild. Bilder jenseits ihrer Flächen*, München: Fink 2009; Editor [with Stefan Rieger]: *Das holographische Wissen*, Berlin: diaphanes 2009. Editor [with a master project group]: *Kulturen des Kopierschutzes* I + II, Siegen: universi 2010. New monograph: *3D. Geschichte, Theorie und Medienästhetik des technisch-transplanen Bildes*, München: Fink 2009. Visit www.multimediale-systeme.de. Visit www.theorie-der-medien.de. email: schroeter@medienwissenschaft.uni-siegen.de

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