Chapter 3
Free Information: Networked Learning Utopia

Katarina Peović Vuković

This chapter analyzes the main problems with mainstream approaches to the relationships between human learning and information networks using theoretical backgrounds of critical theory, philosophy, and sociology of technology. Within that framework, social, political, and even cognitive aspects related to learning are dialectically interrelated with the society. This relationship is the focal point for classical authors, such as Foucault, who reconstructed the episteme of humanistic disciplines from sixteenth century onwards in his study *The Order of Things: An Archeology of the Human Sciences* (1994); Deleuze, who considered education as one of the pillars in the societies of control (1992); Bourdieu and Passeron, who viewed education as one of the main vehicles for social reproduction (1977, 1979).

In relation to these developments, contemporary critical theory (Giroux, 2012; Liessmann, 2008; Nussbaum, 2010; Pusser, 2002, 2006) has focused mainly towards the relationships between contemporary education and the financial crisis that endanger humanistic disciplines (Peter McLaren's conversation with Petar Jandrić in this volume (McLaren & Jandrić, 2015) presents a good case in the point.) Arising from the Frankfurt School of Social Science, however, critical theory is interested in diverse issues from learning and technologies to arts and literature. While all critical theories emphasize certain generic themes such as emancipation and social justice, they arise from different contexts and philosophies. At the intersections of learning and technologies, therefore, it is more appropriate to speak of various critical theories and traditions. During the past few decades, critical theory of education has often been linked to postmodernism. However, following recent theoretical developments offered by theorists such as Peter McLaren, Dave Hill, and Glen Rikowski, this chapter dismisses relativity advocated by critical postmodernists and enters "the Marxist-humanist trajectory" based on neo-Marxist approaches and the original works of Marx (McLaren, 2006; McLaren, McMurry, & McGuirk, 2008).

K. Peović Vuković (✉)
University of Rijeka, Rijeka, Croatia
e-mail: kpvukovic@ffri.hr

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This chapter places the relationships between human learning and technology in the focus of interest in the postindustrial society. Such approach combines neo-Marxist theory of commons, educational philosophy, and history of technology. On that basis, the chapter replaces instrumentalist concepts such as e-learning and technology-enhanced learning (Fejes & Nicoll, 2008; Hayes, 2015, in this volume) with critical approaches characteristic for networked learning (McConnell, Hodgson, & Dirckinck-Holmfeld, 2012, p. 15). Its methodological aim is to step away from narrow understanding of learning in the age of the network through the lens of technological determinism, and to place it in relation to social, political, and economic issues. In this context, it is equally important that networked learning takes place in specific economic and political context, and that it is marked by the specific technological shift (emergence of the network as the central structure of the Internet) which happened in neoliberal societies during 1980s and 1990s. Looking at various connections—"between one learner and other learners; between learners and tutors; between a learning community and its learning resources" (Goodyear, Banks, Hodgson, & McConnell, 2004, p. 1)—networked learning is focused to generic features of all networks and recognizes their dialectical relationships with political economy.

Situated at the intersections between philosophy, technology, and human learning, this chapter seeks inspiration in the heritage of Ivan Illich (1971, 1973). Illich's work is important for its holistic view to scientific disciplines, and its focus to broad social uses of technology. His interest in particular tools, such as software, is always linked to the big(ger) picture: in the best tradition of critical theory, Illich always provides an adequate balance between the general and the particular. Illich's understanding of technologies reaches beyond technological determinism that often blurs the importance of social determination. In this respect, Illich is close to the fundamental critique of technological determinism that starts roughly with Raymond Williams's revision of Marshall McLuhan's work (Williams, 2005), and continues to appear in works of contemporary sociologists such as Manuel Castells (2000) and Pierre Levy's (1999).

This chapter explores contemporary potentials of Ivan Illich's "tools for conviviality" and discusses their relevance for alternative modes of sharing in information networks. It analyzes the concept of knowledge within the context of postindustrial society, and develops a broader understanding of learning in the age of the network. It examines networked learning through the Laclau and Mouffe's concept of "radical democracy" (2001). Instead of looking through narrow frameworks of educational institutions, it links networked learning to practices of broad file sharing that simultaneously participate in individual and social development. Using the framework of peer-to-peer (peer-to-peer) networks, it relates networked learning with Karl Marx's theory of "general intellect" and his historiography of transition from capitalism to communism. On that basis, it develops opportunities to include networked learning into the wider notion of Utopian socialism, and identifies the accompanying dangers arising from appropriation of such visions by the capitalist machine of profit extrapolation. Finally, it utilizes the difference between alternative and oppositional cultures, established by a cultural theoretician Raymond Williams (2003, 2005), in order to stress the dangers of losing political potential of today's authentic alternative cultures.

Illich and the Problem of User Friendly Tools

Networked learning interlinks two fundamental social spheres: education and technology. Ivan Illich acknowledges importance of both spheres, recognizes their dialectical relationships, and places them amongst foundational pillars of the industrial society. Only 2 years after publishing *Deschooling Society* (1971), which discusses the role of technocratic elites in creation of knowledge, *Tools for Conviviality* (1973) applies the same line of argument to technology. Here, Illich elaborates problems that emerge from transfer of consumerist logic in the realm of education. "The individual's autonomy is intolerably reduced by a society that defines the maximum satisfaction of the maximum number as the largest consumption of industrial goods" (1973, p. 13).

Illich's formula, deliberately written in technocratic style, resembles Marx's formulas aimed at detecting specific forms of fetishism related to realms of production and consuming. Marx reconstructs relations between goods and their values; between wages, price, and profit; between profit and working hours. One of the best examples of this unnaturalization of relations is given in his article *Value, Price and Profit* (1969), which unravels the nature of prices of commodities. Like Marx's theorems, Illich's insights reveal the "hidden" character of social relations that seem natural and unproblematic. In relation to learning and technologies, he reconstructs a common understanding of links between satisfaction and consumption, and the underlying processes of limiting individual autonomy. The common, seemingly unproblematic understanding of this relationship is so interwoven in the Western thought that Illich is able to detect its traces even at the level of the language formulations. For instance, the hegemonic relationship between satisfaction and consumption modifies statements such as *I want to learn* into *I want to get an education*, and *I want to walk* to *I need transportation* (Illich, 1973, p. 102).

On such basis, Illich makes the daring proposition: the only technologies from which the society in total can profit are *tools for conviviality*. Such tools oppose the industrial logic of productivity, which defines human work, education, leisure, travel, and other needs as commodities. Crucial for this argument is Illich's definition of convivial technology, as the one that provides maximum *autonomy* for its users. In a sort of Habermasian conclusion, Illich advocates re-polarization of human control over tools, and minimization of the role of experts that are never neutral. As the ruling class of the technological society, experts cannot be expected to promote ideals of socialist justice. Therefore, the society needs "new politics" that "would aim principally to exclude the design of artefacts and rules that are obstacles to the exercise of … personal freedom" (Illich, 1973, p. 19).

In *Technology and Science as "Ideology,"* Jürgen Habermas (1968) offers a theoretical solution for technological determinism. He reflects on Herbert Marcuse's study *One-Dimensional Man* (1964), which elaborates negative aspects of technological rationalization and the resulting ideological impacts of autonomous science and technology, and concludes that science and technology cannot determine social progress. Scientific facts cannot be challenged, claims Habermas, neither technology as such can be challenged. Those are neutral agents, integrated in social order, which simply reflect relations in production, social systems, and institutional

frameworks. Habermas's concept of "scientization of politics," analyzed in detail in his essay, *The Scientization of Politics and Public Opinion* (1980), offers a novel technopolitical approach. According to Habermas, technology and science are not problems in their own right. Instead, the problem lies in "scientization of politics," or understanding science and technology as (temporary) solutions for imperfect rationalization of the society. Following this line of reasoning, traditional politics is acceptable only temporarily—until complete depolitization of normative regulations and transfer of initiative into the hands of scientists, scientific analyses, and technical planning (Habermas, 1980, p. 63). Habermas claims that such depolitization must be challenged, and that science and technology, together with the very concept of progress, must be constantly questioned in the realm of the "public sphere" (Habermas uses the term *Öffentlichkeit*), which must not leave technological and scientific progress in the hands of supposedly neutral, rational politics.

In his preface to *A Contribution to a Critique of Political Economy* (1859), Marx defines social change as the change in forces of production: sources of energy, including human labor, and technology. Later theoreticians often repeat Marx's conclusion that "the hand mill gives you the feudal lord. The steam mill gives you the modern capitalist" (Marx, 1955). In 15th chapter of *Capital,* entitled *Machinery and Large-scale Industry* (1976, p. 247), Marx arrives to the techno-determinist conclusion that every technology is necessarily a capitalist. However, David Harvey, one of the most prominent contemporary followers of Marx, proposes a less determinist conclusion. Although technologies are always capitalist, we should inquire how to change capitalist technology into a socialist technology (Harvey, 2010, p. 234). According to Illich, the answer could be found in *tools for conviviality*.

Illich locates politics and ideology of technology away from abstract spheres of autonomy into the structure or grammar of technology. Here, Illich combines the best ideas offered by the two most prominent theorists related to technological determinism: Karl Marx and Marshall McLuhan. In order to emphasize the importance of media structures, McLuhan makes a revolutionary claim that "the medium is the message" (2003). However, such claim is also techno-determinist. Avoiding Marshall McLuhan's technological determinism, Illich uses media structures as agents of social change. Applied to contemporary context, Illich's work can be used to demarcate two distinctive approaches to software development. On the one hand, there are "user friendly" proprietary tools which take away many liberties from their users. On the other hand, there are "free software" tools which might represent a contemporary form of tools for conviviality (Jandrić & Boras, 2012, pp. 173–183).

Illich's definition of convivial tools clearly recognizes two fundamental differences between proprietary software and free software. First, user friendly proprietary software relates satisfaction to consumption. The promise of "friendship" between customer and company is based on the (often false) assumption that the company will deliver "intuitive" software interface that no longer requires special preparations for usage. As opposed to proprietary software, free software does not offer "services" of a similar kind but encourages its users' own learning about technology. Second, proprietary software is predefined, closed, restricted for modifying, and bounded by copyright laws. Fundamentally, the promise of "friendship" between users and technologies cannot be realized because the logic of production

and reproduction of software is sealed by copyright agreements. Free software, on the contrary, leaves source code open for change and distribution under the conditions of allowing future reuse. In sum, users of free software get two main advantages over users of proprietary software: convivial technology powering free software is not structured to mask inner workings of the machine, and users can modify free software according to their needs.

Such differentiation between "user friendly" proprietary software and free software is closely related to the opposition between formal institutionalized learning vis-à-vis peer networked learning developed in Ivan Illich's study *Deschooling Society* (1971). Convivial learning, as well as convivial tools, can only result from networked interaction between peers. The next chapter in this volume, *Getting It Out on the Net: Decentralized Networked Learning Through Online Pre-publication* (Ralston, 2015), shows an excellent example of this relationship.

Networked Learning and the Postindustrial Society

Looking at technological structures and their relationships to capitalist modes of production, Illich proposes an important theorem: the one of mutually exclusive categories of *productivity* and *knowledge*. As postindustrial society has merely redefined capitalist models of productivity and knowledge from the industrial society, industrial productivity always comes "at the expense of convivial effectiveness" (Illich, 1973, p. 18). Intrinsically linked to the postindustrial society, where the prefix "post" refers to the shift in dynamics of production and consumption, informational capitalism, or Manuel Castells's informationalism (2000), radicalizes these trends in multiple ways. In *The Coming of Post-Industrial Society* (1973), *The End of Ideology* (2000 [1960]), and *The Cultural Contradictions of Capitalism* (1972), Daniel Bell outlines a new kind of society—the postindustrial society that is information-led and service-oriented. Bell also argues that ideology has arrived to its end because Western democratic politics and capitalism have triumphed. In *The Post-Industrial Society* (1973), Alain Touraine develops this argumentation further, but disputes Bell's ideas on the end of ideology (1971). According to Castells, social power is in the hands of those in the position to manipulate information, program networks, and switch between networks (Castells, 2009). As a central social agent, information is always a derivate from or a resource of profit.

Social paradigm of the capitalist society based on the power of information has been formed, intensified, and canalized in the process of capital restructuring that started in 1980s. In The *Rise of the Network Society, The Information Age: Economy, Society and Culture* (2000), Manuel Castells lists the four main goals of capital restructuring:

1. Deepening the capitalist logic of profit-seeking in capital–labor relationships.
2. Enhancing the productivity of labor and capital.
3. Globalizing production, circulation, and markets, seizing the opportunity of the most advantageous conditions for profit-making everywhere.

4. Marshalling the state's support for productivity gains and competitiveness of national economies, often to the detriment of social protection and public interest regulations (Castells, 2000, p. 19).

Those trends are dialectically interlinked with education: its instrumentalization, redirection towards skills and application, marginalization of social sciences and humanities, and the shift away from blue-skies research in all fields. Postindustrial education is primarily focused to creating and maintaining flexible work force often depicted by the figure of learner-worker. This process is not aimed at perfection in one field and/or accumulation of knowledge and specialization. Instead, it is directed at adapting workers to turbulent labor markets. Learning outcomes are structured according to requirements of the global marketplace, but the demarcation between the center and the periphery remains as strong as ever. Last but not least, trends of industrial and postindustrial capitalism are expanding to social spheres that had been, up to recently, fairly immune to the logic of the market (Fraser, 2014).

In *Postscript on Societies of Control* (1992), Gilles Deleuze describes restructuring of the public sphere, and shows its implications for the realm of education. Starting from Foucault's analyses of eighteenth, nineteenth, and early twentieth century disciplinary societies, where prison and factory had been based on very similar models, he describes contemporary transformations towards a universal model embodied in corporations. Instead of separate spaces governed by specific rules, we are now facing inseparable variations of the same control mechanism. This principle is central to educational process as the continuous mechanism of control in the form of "perpetual training" that, ultimately, replaces the traditional school as such, and which is "delivering the school over to the corporation" (Deleuze, 1992). The best example of that process is "the modulating principle of "salary according to merit," which brings competition into the process of teaching and learning where "perpetual training tends to replace the school, and continuous control to replace the examination." Declaratively, continuous assessment is aimed at objective evaluation of student accomplishments and creation of individualized feedback. At the same time, however, it has a more malevolent task of limiting social mobility for those who fail to comply in one or another period of their lives.

In contrast to perpetual examination in neoliberal postindustrial societies, it is interesting to mention the example of former socialist Yugoslavia where social mobility had been secured by a relatively open educational model. However, the Yugoslav model had been highly criticized on the grounds of low productivity since many students never completed their schooling or took extensive periods of time to graduate. Neoliberal society defines productivity in more rigorous ways. However, the very concept of productivity inevitably outcasts some individuals: those who could not comply, or do not believe, as Illich formulated, in the value of "knowledge stock" (1973, p. 16). In context of global capitalism, the "industrially determined shape of our expectations" (1973, p. 27) forms goals of educational systems. As Bertell Ollman concludes, the real goal behind the process of continuous evaluation is not to assure social fairness, but to prepare students for discipline and speed-ups that await them at the marketplace (2011).

Utopia of Peer-to-Peer Networks

During the past decades, there has been a lot of research regarding pros and cons of learning and teaching inside and outside of classrooms. However, a lot of quality networked learning goes "under the radar" of formal educational institutions. For instance, while free distribution of information is commonly used as the base of networked learning, alternative models of distributing information, such as peer-to-peer networks, are often not provided with adequate attention. In mainstream theory, the dominant approach when examining peer-to-peer networks is copyright infringement. However, peer-to-peer networks are not only proprietary problems; they are also tools for networked learning. Two platforms, *Ifile* and *Gigapedia* (not operational from 2012) together created an open library with more than 400,000 e-books available for free, but illegal downloads (Taylor, 2012). In 2012, academic publishers including *Cambridge University Press, Elsevier* and *Pearson Education*, led by *Booksellers Association (Börsenveiren)* and the *International Publishers Association (IPA),* organized legal action against copyright infringement and brought down the sites.

If we ignore legal aspects of their action and focus only to its output, academic publishers truly acted as "the enemies of science" (Taylor, 2012). In effect, their battle against piracy resulted in destruction of horizontal networks for distribution of knowledge. Peer-to-peer networks operate under the "plenitude economy," taking advantage of digital flexibility and decentralization. Such distribution of information causes radical democratization, which places peer-to-peer networks in direct conflict with capitalism. Following the crash of welfare state, academic publishers have become owners of human knowledge. By distributing books under copyright laws, they embed the logic of profit into scientific inquiry and frame it to the dichotomy of "producing" and "consuming" knowledge. Proprietary infringement cannot be discussed separately from profit. In order to propose fundamental questions about knowledge outside of the realm of profit, therefore, it is necessary to leave aside the paradigm of intellectual property, even if only for the purpose of imagination.

The problem of imagination and re-installation of Utopias is one of the central problems in political theory of late capitalism. In his essay *The Spectre of Ideology* (1994, pp. 1–33), Slavoj Žižek attributes the sentence "it is easier to imagine the end of the world than to imagine the end of capitalism" to Fredric Jameson. Although he did not write that sentence, Jameson indeed explored the issue of political imagination and paved the way towards opportunities for new cognitive mapping (1991). In spite of various legal issues, promoters of horizontal networked learning—as agents of Utopia—can be found inside and outside of educational institutions. The concept of the network is dialectically linked to a specific definition of knowledge based on open sharing of information and knowledge. The Internet has been developed within the context of higher education, and its fast and progressive development can at least in part be attributed to traditional scientific ethos of egalitarianism. Networked learning vis peer-to-peer networks is deeply rooted in social history and technological structure of information and communication technologies. In the tradition of critical Utopia, therefore, it simultaneously maintains "a clear balance between the

imagined and hoped-for future, and the critical analysis and concrete action that [is] needed to achieve that future" (Boyd, 2007, p. 7). So, are there any useful models that might link networked learning and free sharing?

Radical Democracy

Horizontal distribution of knowledge installs radical (or direct) democratic paradigm enabled by the networked structure of the Internet into human learning. In this context, networked learning can be understood as "radical democratic praxis." Following influential collaboration between Ernesto Laclau and Chantal Mouffe on the concept of "radical democracy," the politics of the Internet can be understood as the politics of antagonism inscribed in political struggle and hegemony of particular groups. Conflicts and divisions are disturbances, "that unfortunately cannot be eliminated … because we will never be able to leave our particularities completely aside in order to act in accordance with our rational self" (Laclau & Mouffe, 1985, p. xvii). The fundamental force behind Laclau and Mouffe's shift in understanding democracy is related to the shift away from the non-essentialist views "where the aspect of de-totalization and decentering prevails and where the dispersion of subject positions is transformed into an effective separation" (Mouffe, 1993, p. 77).

Here, Laclau and Mouffe offer what Deleuze and Guattari could not offer due to non-conflict character of their philosophy. Instead of dispersion and separation, their concept of hegemonic articulation develops an alternative definition of public sphere. It is a re-definition that aims towards "a radical democratic citizenship" as the construction of a common political identity in the form of a new hegemony articulated through new egalitarian social relations, practices, and institutions. Instead of peaceful coexistence of decentralized subjects, therefore, the model of radical democracy relies on antagonism and establishment of new provisional political subjects. Networks that already act according to models of radical democracy, such as the removed *Gigapedia,* do not only propose different models of learning. Rather, such radical models act as symptoms of numerous problems within the existing democratic and capitalist models of production and consumption. The peer-to-peer networks establish new models of distribution and simultaneously oppose the existing ones. We can point at least three issues related to copyright that are seriously affected with the emergence of peer-to-peer networks: (1) the question of parasite industries, (2) the issue of commodification of knowledge, and (3) the problem of uniqueness.

Exactly like in the case of *Gigapedia*, institutional action against piracy is usually legitimated as the struggle for authors and their rights. However, silence about the role of industries that parasite between authors and readers is more significant than arguments that are brought in the open. In the debate on piracy, cultural industries cleverly disavow the profit they make on authors. Furthermore, the concept of copyright suffers from much deeper problems. "To oppose copyright is to oppose capitalism" writes Johan Söderberg (2002), since history of capitalism and

copyright are one of the same. Economy and politics of copyright are conceived as the imperative to define every object, experience, and person in the manner of its many equivalents, because of their exchange values. Finally, the problem of uniqueness has become obvious in the new amateur culture that often ignores the matter of authorship. While the history of literature has seen authors who deliberately questioned authorship (William Burroughs and his cut-up method, Kathy Acker's pastiches, etc.), (Hayles, 2002, p. 78; Wollen, 1998, pp. 8–10) contemporary popular culture has turned playing with authorship into a widespread, common activity.

According to Marc Bousquet, texts are never unique because they are social products of a general community intellect (2003, p. 173). Sometimes, the notion of "originator-therefore-owner" masks the fact that hundreds of people had been working on the same problem, and/or arrived to almost the same solutions. Robert K. Merton asserts that the collective nature of scientific invention can be proved by the so-called multiples or multiple inventions that took place independently and simultaneously. Newton and Leibniz simultaneously discovered the differential and integral calculus; Darwin and Wallace both wrote on natural selection; and some six people independently hit upon the principle of the conservation of energy (Dusek, 2006, p. 95). In the age of digital networks, obviously, the question of uniqueness becomes more complicated than ever.

Intellectual Property in the Age of Postindustrial Reproduction

Property has always been a fundamental component of capitalism and market economy. In information-based knowledge economy, intellectual property has slowly but surely become one of its most important aspects. Contradiction between originality of author's work and the need for production of physically identical copies characterizes all capitalist modes of production and extrapolation of profit. However, common understanding of the end of the book (Coover, 1992) often masks economic dimensions of contemporary eschatology. While it is questionable whether the concept of authorship is threatened by peer-to-peer networks, it is obviously the case with copyright. Even mainstream lawyers seem to have arrived to the consensus that contemporary commercial models of intellectual rights should adapt to information and communication technologies (Samuelson & Glushko, 1991).

Capitalism is founded on the concept of originality, which dates roughly since the end of the eighteenth century (Biti, 2000, p. 22). In his lecture *What Is an Author?* Michael Foucault (1969) describes genesis of the contemporary concept of author as the original craftsman of the work (*oeuvre*), which is unable to arrive to existence before the emergence of the new discursive knowledge about the individual subject. This kind of knowledge is inducted by the development of bourgeois individualism and property, accompanied by the logic of industrial production of standardized, unified copies, and protected by copyright. Proponents of copyright tend to consider questions concerning authorship and profit together. However, the contradiction of producing identical copies, that each aim to be original, has become

obvious in the process of decentralization of media for the sake of distribution of information. Devaluation of the ideal of singularity, or originality of author's work, does not result from information and communication technologies—instead, they "only" exposed and amplified the contradiction that has always been there.

This contradiction had been noticed as early as 1936 in Walter Benjamin's essay *The Work of Art in the Age of Mechanical Reproduction* (1969, p. 223). It rests on two circumstances, writes Benjamin, both of which are related to industrial form of reproduction, "the desire of contemporary masses to bring things 'closer' spatially and humanly," and "their bent toward overcoming the uniqueness of every reality by accepting its reproduction" (1969, p. 223). At the same time, the process is proportionally reversed. While it aims at liquidation of an aura and uniqueness of cultural industries even in the era of postindustrial reproduction (where every node/user becomes producer and distributer), copyright tries to detain an illusion of uniqueness through its relationship to every physical copy. However, digital reproduction clearly indicates that physical copy is not necessarily related to authorship, and that the issue of authorship rests beyond the matter of physical reproduction.

Walter Benjamin writes about liquidation of uniqueness, distance, or aura in the age of mechanical reproduction. In his work, Benjamin mostly refers to liquidation of uniqueness of visual artwork consumed at a distance. In this respect, visual arts and literature are different. Unification of print happened much earlier than unification of visual art (photography and film). Nevertheless, at certain historical moments, all forms of art have distanced from their material forms. The conflict described by Benjamin, which has emerged in the age of mechanical reproduction, exploded in the era of the Internet. Radical democratic models of the peer-to-peer networks, and the associated problems pertaining to intellectual property, are therefore trajectories of the same historical sociotechnical evolution.

Peer-to-Peer Networks as *General Intellect*

Peer-to-peer networks oppose traditional forms of profit extrapolation from learning. As the Internet has finally lived up to Jean-François Lyotard's well-known scepticism towards metanarratives, past and present definitions of knowledge confront each other in truly dramatic ways. In his study *The Postmodern Condition: A Report on Knowledge* (1979), Lyotard addresses status of knowledge in the postmodern era, examines problems of legitimation in the era of "computerization of society" (1979, p. 7), and arrives to the conclusion that social crisis has been caused by blending knowledge with technology. The scientific knowledge, writes Lyotard, does not represent totality of knowledge, since it always existed in relation to "narrative." On the other hand, however, computerized knowledge does not need great narratives for its legitimation (1979, pp. 3–9).

It remains unanswered whether such condition results from computerization or deregulation of public sphere. Looking at the Internet as a public sphere, it seems that devaluation of grand narratives simultaneously bears positive and negative consequences. As the only medium that allows direct networked connections

between users without hierarchical mediators, the Internet radically decentralizes production and distribution of information. Alexander R. Galloway (2006) claims that the described change is not merely infrastructural, but also political. Based on decentralized structure of the medium, network technologies create initial gaps in the capitalist production. For instance, neo-Marxists argue that free software proofs Marx's thesis that "at certain stage of their development, the material productive forces come into conflict with the existing relations of production" (Žižek, 1998, pp. 33–34, in Barbrook, 2000). In order to determine whether network technologies have real potentials to stand up against capitalist modes of production, it is useful to examine how Marx initially imagined that conflict.

In the ninth chapter of *The Grundrisse,* Karl Marx introduces the concept of "general intellect" which stresses the intrinsic connection "between relative surplus value and the systematic tendency for the scientific–technical knowledge to play an increasingly important role in the production process" (Smith, 2013). As capital continuously works towards maximization of productivity, it invests in "general intellect" that is responsible for progress of scientific knowledge. Capital also allows an incremental increase in free time (which should not be mixed with leisure!) required for growth of the general intellect. However, capital allows such developments only in order to maximize profit, and the in-built contradiction between creativity and profit orientation constantly intensifies. This is the process that leads capitalism to its inevitable end and to transition from capitalism to communism. This unfulfilled prophecy has been heavily attacked by sociologists such as Anthony Giddens (1995 [1981]), while Marxists such as Paolo Virno and Carlo Vercellone claim that Marx merely misestimated the duration of the transitional historical period and that "collective appropriation of knowledges has in fact occurred" (in Smith, 2013).

Contemporary usage of general intellect for public good can be partially explained by Virno's core term "multitude" (Virno, 2004, p. 27, 2007; Vercellone, 2007), as conflicts between peer-to-peer networks and cultural industries seem to result from the conflict between creative powers of general intellect and capital's profit orientation. Based on Marx's ideas, Richard Barbrook concludes that such conflict would finally lead to "cybercommunism" and claims that American army "unintendedly" financed its creation (2000). Barbrook is not a naive postcommunist sympathizer. On the contrary, he is well aware that the Internet is not a Utopian place, but a bizarre conglomerate of nodes and ties. Its rapid progress, as well as its openness, results from initial anarchism, research ethic, market capitalism, and pure chance. As soon as capital had gone digital, however, early optimism had been replaced by scepticism. On that basis, Richard Barbrook and Andy Cameron describe the 1990s as the decade of "the Californian ideology" which consists of establishing flexible economic network models (1995).

Research into cultures that participated in early implementation of network technologies may easily lead to controversial conclusions. While it is fairly easy to imagine a neo-Marxist cybercommunist Utopia, it is even easier to imagine its direct opposition where capitalist markets could appropriate technological developments and even benefit from communist subversions. Historically, such developments are quite common, as the basic structure of capitalist entropy works through

constant perpetuation of market logic by appropriation of authentic cultures (which could, nevertheless, in the moment of their creation be subversive). Therefore, the process that might result with death of capitalism could easily turn into the process of its regeneration: fresh ideas could become new screws in the capitalist machine.

Alternative Cultures

Models existing and new, old, and progressive, neoliberal and libertarian—such oppositions are even more complex from the viewpoint of ideology. According to Marx's passage from *The German Ideology*, "the ideas of the ruling class are in every epoch the ruling ideas" (Marx & Engels, 1970, p. 64). Marx did not provide a systematic theory of ideology. However, he understands history as determined by base, forces, and relations of production. Leftist theories have repeatedly tried to solve the problem of Marx's economic determinism. Following Althusser's work on relative autonomy of superstructure (which Althusser calls "ideological state apparatuses"), Raymond Williams develops the view that superstructure is not a mere reflection of the base—instead, the result of its relative autonomy is hegemony.

In *Base and Superstructure in Marxist Cultural Theory* (2005), Raymond Williams describes that relationship in depth. The real conflict between different cultural, political, and economic groups happens through the process of complex negotiations. In general, cultures are constituted around the conflict between two large groups: residual (traditional) and emergent (alternative and oppositional) (Williams, 2005, p. 40). Conflicts between residual and emergent cultures are rather simple, and the relationships between alternative and oppositional emergent cultures are more complex. Oppositional cultures aim at overthrowing traditional models, while alternative cultures offer radically different futures.

Intellectual property and new forms of knowledge are subject to these general principles and enter into similar conflictual relationships. They are defined in various oppositional and alternative manners, many of which are far from clear and self-sustaining. E-learning is a clear case in the point. It is a non-conflict oppositional model, which is planted firmly within the ideological framework of the well-defined and established neoliberal educational paradigm. According to Williams, oppositional cultures "do not in practice go beyond the limits of the central effective and dominant definitions" (2005, pp. 39–40). Based on conceptual framework of critical theory, therefore, networked learning is an alternative model aimed at "revolutionary critical pedagogy" (McLaren, 2010; McLaren & Jandrić, 2015, this volume).

Oppositional cultures are not authentic alternatives, but driving forces for new capitalist models of production. Looking at legitimation for e-learning courses, marketing addresses future students through the discourse of novelty, thus utilizing the form of clash between traditional and emergent models of education. Classroom lectures are described as "boring," while e-learning courses are considered "engaging" (Carr, 2012). According to e-learning pioneer Bernard Luskin, the "e" in

e-learning stands not only for "electronic" but also for "exciting, energetic, engaging, extended" learning (2010). Transformation of traditional learning models legitimates itself through ideological terms such as "engaging" or "interactive." At various levels of using technologies in teaching and learning, detailed critical analysis shows how policy discourse narrows conversational space for learning (Hayes, 2015, this volume).

Commodified relationships between technology, information, and e-learning are legitimized by for-profit universities, corporations, and students who need an education in order to get a job. However, "interactive learning" does not offer a distributive subversion from the existing models of education (limited by copyright rules), but a modulated oppositional form of appropriation. In order to create a truly alternative model, networked learning creates alternative ways of making connections within the frame of the existing capitalist modes of knowledge production—in the first place, through distributive nature of the Internet. On that basis, the focus to connections characteristic for Goodyear et al.'s early definition of networked learning (2004) gets a deep political meaning.

The authentic alternative cultures in the form of networked learning supported by peer-to-peer networks offer radically different models of sharing knowledge and information. However, Williams warns that the level of conflict between emergent and traditional models varies. There is no formula that could define which culture is "truly" alternative, and which culture is "only" oppositional. Therefore, the spectrum between e-learning and networked learning contains many shades of gray.

There are several projects that do not oppose the dominant order as radically as peer-to-peer networks, but still propose new models of learning by digital network technologies. For instance, *Wikipedia* has completely pushed off the market *Microsoft Encarta* published by *Microsoft Corporation* from 1993 to 2009, because people are simply no longer willing to pay for an encyclopaedia (Cohen, 2009). Also, there are *MOOCs* (Massive Open Online Courses) that promote open access, free participation, connectivism, and open content licensing. However, the *MOOCs* do not present a radically different perspective to education, since they have not moved away from re-proletarization of teachers (according to McLaren (1998, p. 435), this is the global problem of computer-based education). Such examples provide useful illustrations for contemporary cultural conflicts. However, levels of conflict between dominant and emergent/oppositional cultures are constantly changing. Therefore, it is impossible to predict outcomes of oppositional conflicts, or even guess whether resolution will arrive in the form of capitalistic appropriation or revolution.

Networked Learning as Critical Praxis

How to define knowledge? Is there a need to protect knowledge by copyright? Critical approach to copyright is not aimed at developing final solutions, but at providing spaces for different thinking. In Heidegger's terminology, *Lichtung* does not aim to clarify by providing definitions, but to clarify—like open meadows in the

middle of the woods. Therefore, the fundamental goal of critical approach to copyright is to deconstruct seemingly natural relationships between knowledge and profit, and to create opportunities for defining knowledge, education, and information as common goods.

Such thinking is incorporated even in *The Universal Declaration of Human Rights,* adopted by the *United Nations General Assembly* since 1948. *Article 27* of the *Declaration* says: "Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits" (United Nations, 1948–2008). Nowadays, understanding culture, arts, and scientific knowledge as common goods implies proposing new models of social organization. The decentralized nature of the Internet becomes the main tool for executing the proposed distributive justice, but horizontal models of networking have not (yet) managed to remove dominant modes of knowledge production.

At a fundamental level, development of alternative models of knowledge distribution is based on deconstruction of naturalized relationships such as copyright and knowledge. In this view, downloading books from peer-to-peer networks is not an act of negating the author (such is the act of plagiarism), but an act of negating copyright as a legal mechanism for creation of profit. Mutual connections between knowledge and profit should be problematized, since they are not inherent but merely emerge from capitalist modes of production. Critical theory creates several paths towards new learning models. Besides grassroot movements related to peer-to-peer networks, dominant profit orientation of information can be opposed in less dramatic ways by publicly financed projects such as *Duolinguo* and user-financed projects such as *Wikipedia*. As can be easily seen from Jandrić's (2010) study of egalitarian educational practices on *Wikipedia*, distributed horizontal networks can offer true potentials for radical alternative learning.

"Politics and the economy," claims Foucault, "are not things that exist, or errors, or illusions, or ideologies. They are things that do not exist and yet which are inscribed in reality and fall under a regime of truth, dividing the true and the false" (2008, p. 20). Discursive knowledge implied truths, and common understandings have serious impacts on functioning of the society. Social consensus on privatization of knowledge and information is obviously powerful—since the relationship between knowledge and profit is commonly understood as "natural." Struggle against the first inevitably begins with deconstruction of the latter. Therefore, revealing ideological backgrounds of seemingly natural relationships becomes the first step in developing networked learning as critical praxis.

Territorialization of the De-territorialized

Williams's neo-Marxist analysis of various groups included in social dynamics indicates complexity and controversy of authentic ideas, thus complicating Heidegger's ideal of providing spaces for Utopian ideas or *Lichtung*. Gilles Deleuze

and Félix Guattari establish a formula for describing such controversy and analyze social dynamics in terms of territorialization, de-territorialization, and new territorialization. De-territorialization describes a process of redefining a set of prepositions and conceptual relations established in the process of territorialization. In *Anti-Oedipus: Capitalism and Schizophrenia* (2009), Deleuze and Guattari see Freud's psychoanalysis as a form of de-territorialization of the established knowledge about human psyche. Using this example, they warn about various dangers associated with the process of new territorialization: although Freud de-territorialized human psyche, he formed a new dangerous territorialization of human psyche through specific territorialization of the nucleus family triangle instantiated in the myth about Oedipus.

Progressive ideas in the realm of information and communication technologies are caught in a similar dialectic. For instance, free information movement is a form of de-territorialization because it disturbs common understanding of the relationships between information and profit. However, there is always a danger of a new territorialization of free information movement in the form of an emergent oppositional culture. Such danger must be considered, and even anticipated, since free information movement refers to a wide spectrum of theoretical analyses which co-create diverse forms of de-territorialization of information and knowledge. For instance, Richard Stallman initiated the *Free Software Foundation* and *GNU Project* that promotes free usage and modification of software for as long as it is distributed under the same conditions (Stallman, 2002). Those norms have later been applied to various cultural artifacts such as music, design, literature, and education. However, conceptual understanding of free software strongly varies.

Originally, free software was conceived as subversion within the system. Stallman strongly insisted on blending theory and practice, but many early implementers of free network protocols did not care about political aspects of the idea. It is only later that neo-Marxist theory and practice has completely politicized the movement. This differentiation causes major differences in formulation of political potentials offered by free information, which resulted in fragmentation and division between neo-Marxists and pragmatics. Even in the most advanced neo-Marxist theories, digital commons are still seen as suspicious because of their virtual, non-material character (Federici, 2010).

The concept of "commons" can be defined narrowly and broadly. In Elinor Ostrom's narrow definition, commons are exhaustible elements of the environment such as forests, rivers, and air. Education, health, public spaces, and all other social elements that cannot be exhausted by usage are defined as "public goods" (2006). However, those notions are often hard to distinguish. In a broader sense, therefore, commons can be understood as goods that are not and should not be private. Marxist theory insists on the broader definition, which is crucial for understanding political aspects of the idea of free information. However, such approach is burdened by various reservations. For instance, in *Feminism and Politics of the Commons*, Silvia Federici argues that "emphasis on knowledge and information (…) skirts the question of the reproduction of everyday life" (2010). Such scepticism towards free software movement limits its theoretical and practical opportunities. Furthermore,

it plays a dangerous role in the process of incorporating subversive ideas into the neoliberal matrix, or another territorialization of the idea.

Similarly, networked learning de-territorializes generally accepted notions of e-learning and technology-enhanced learning by disturbing their relationships to values and practices of global neoliberal capitalism. However, it can easily be re-territorialized as an emerging oppositional culture planted within the existing ideological paradigm. Up to a level, this already happens in "apolitical" areas of networked learning such as small-scale applications and design. In order to re-territorialize as an emerging alternative culture, networked learning requires constant conversation between critical theory and networked practice.

Conclusion

This chapter uses Ivan Illich's philosophy of technology as the starting point for convivial reconstruction of contemporary relationships between learning and information and communication technologies. As political aspects of tools are dialectically intertwined with their structure, open code and the resulting possibilities such as free modification and distribution of information have become crucial aspects of media democratization. On that basis, peer-to-peer sharing can be defined as an authentic alternative critical emancipatory practice. Convivial and radical democratic tools do not emerge from centralized institutions, but from peer-to-peer networked distributive models. Peer-to-peer culture is based on generic network principles that have the power to challenge fundamental notions of market economy. On that basis, it creates fertile ground for rethinking new opportunities for learning in the age of the network. New networked learning models emerge from conflicts inherent to capitalist mode of production. Therefore, they can be formulated through application of Ernesto Laclau and Chantal Mouffe's idea of "radical democracy" (2001).

In the framework created by Raymond Williams's views to complexity of hegemony in capitalist societies (2005) and Deleuze and Guattari's analyses of deterritorialization (2009), e-learning is a classic example of a non-conflict oppositional model. Based on horizontal, nonhierarchical structure of the network, however, networked learning still holds revolutionary strength and represents an authentic alternative oppositional model based on deconstruction of naturalized relationships such as copyright and knowledge. Like all Utopian ideas, this conclusion should be considered with caution. Some practical embodiments of radical alternative models may remain faithful to original ideals. However, others can easily (and often unconsciously) change sides and turn into vehicles for a new capitalist commodification. History of capitalism is packed with examples where alternative oppositional models have been (re)appropriated by market economies. In order to avoid capitalist appropriation of its authentic alternative, therefore, networked learning should constantly engage with its foundations in the realm of critical theory.

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