

# READING MARX IN THE INFORMATION AGE

A Media and Communication Studies  
Perspective on *Capital Volume 1*

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## APPENDIX 2

Knowledge, Technology, and the General Intellect in the  
Grundrisse and its “Fragment on Machines”

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### 1. Introduction

#### Media Companies

Of the world's 2,000 largest transnational corporations, 232 or 11.6% were in 2014 located in the realm of communications and digital media, which is comprised of advertising, broadcasting, communications equipment, computer and electronic retail, computer hardware, computer services, computer storage devices, consumer electronics, electronics, Internet shopping and distribution, printing and publishing, semiconductors, software and programming, telecommunications (data source: Forbes 2000, 2014 list). Digital and information capitalism is one dimension of contemporary capitalism. It reflects the growing importance of science, communication, knowledge, computing, the Internet, and information labour in production. Scholarship has in recent years stressed that Marx in the *Grundrisse*, especially in the so-called “Fragment on Machines” and with the category of the general intellect, anticipated such developments.

#### The *Grundrisse*

This chapter is a reflection on the *Grundrisse* in the age of digital capitalism and digital labour. It contributes to recent studies on the *Grundrisse* that have largely neglected issues such as advertising, the Internet, and the digital world. It is, for example, telling that on a total of 736 pages, the two collected volumes *In Marx's Laboratory: Critical Interpretations of the Grundrisse* (Bellofiore, Starosta, and Thomas 2014b) and *Karl Marx's Grundrisse: Foundations of the Critique of Political Economy 150 Years Later* (Musto 2008) do not a single time mention the terms “digital”, “Facebook”, or “Twitter”, and that the terms “Internet” and “advertising” occur only twice. Although such works provide extremely interesting insights into Marx's philosophy, they in contrast to some other recent publications (e.g., Fuchs and Mosco 2012, 2015a, 2015b) remain completely idealist, ignorant, and abstract when it comes to applying Marx to popular culture and communications.

This chapter provides a reading of Marx's *Grundrisse* by discussing advertising and productive labour in the context of social media (section 2) and by focusing on the “Fragment of Machines” (section 3) and its connection to other parts of the *Grundrisse* (section 4), as well as situating cultural and digital labour in the context of the Marxist debate on the “Fragment” and the general intellect (section 5).

Marx wrote the *Grundrisse* in the time from October 1857 until May 1858 (MEW 42,V). For some, the *Grundrisse* is an interesting and important draft of *Capital* that helps to understand the

latter's genesis (Rosdolsky 1977), whereas for others it is "the central point in the development of Marx's theory" (Negri 1988, 87) and "an original work in its own right" (86) that stands independent of *Capital* and "represents the high point of Marx's revolutionary thinking" (88). Setting apart *Capital* and the *Grundrisse* served at the time of the Soviet Union often the purpose to question orthodoxy and Stalinism. Today it is much easier to see the complementarities and continuities between the two works—that is, not to read Marx against and beyond Marx, but Marx with Marx. The *Grundrisse* is "a veritable 'laboratory' in which we can observe Marx in the very process of unfolding his dialectical investigation of the movement of capitalist social and economic forms" (Bellofiore, Starosta, and Thomas 2014b, 3). All of Marx's works and categories are dialectical in character. In the *Grundrisse* the grounding in Hegel's logic is more explicit than in *Capital*, although both employ the same dialectical method of analysis and development.

## 2. Advertising, Circulation, and Productive Labour in the Age of Social Media

### Dallas Smythe on Advertising

The Canadian Marxist political economist Dallas Smythe (1977) argued in his article "Communications: Blindspot of Western Marxism" that in advertising-financed media, the audience's labour produces attention as an audience commodity, which is sold to advertising clients. He wrote that it is a theoretical and political mistake to assume, such as the critics of the audience labour thesis do (for a prototypical example, see Lebowitz 1986), that advertising and audience labour are unproductive attributes of the sphere of circulation that eat up surplus value created in other parts of the economy. The most important online and social media, such as Google/YouTube/Blogspot, Facebook, Twitter, Weibo, and Baidu, use targeted advertising-based capital accumulation models. In their case, audience labour is users' digital labour, which creates data and meta-data that is sold as commodity to the platforms' ad clients. Google, Facebook, and the like are the world's largest advertising agencies (Fuchs 2014a, 2015).

The difference between audience commodification in commercial broadcasting and user commodification on corporate social media is that the in the latter case online activities generate data that can be monitored in real time; that data is networked across the Internet; that ads can be individually targeted based on interests and profiles, the audience size, composition; that behaviour is due to constant online surveillance not an estimation, but exactly known; and that commodification affects the convergence of users' various social roles. Can the *Grundrisse* help us to better understand the political economy of online advertising?

### Marx on Productive Labour in the Grundrisse

Marx argues that productive labour "is only that which produces *capital*. [...] *Labour becomes productive by producing its own opposite*" (Marx 1857/1858 [English], 305). "Actors are productive workers, not in so far as they produce a play, but in so far as they increase their employer's wealth. But what sort of labour takes place, hence in what form labour materializes itself, is absolutely irrelevant for this relation" (328–329). "A. Smith was essentially correct with his productive and unproductive labour, correct from the standpoint of bourgeois economy. [...] The capitalist obtains labour itself, labour as valuepositing activity, as productive labour; i.e. he obtains the productive force which maintains and multiplies capital, and which thereby becomes the productive force, the reproductive force of capital, a force belonging to capital itself" (273–274).

An argument against audience and digital labour theory is that only wage-labour is productive, surplus-value generating labour (see, e.g., Lebowitz 1986). Marx's concept of productive labour in the *Grundrisse* (just like the one in *Capital Volume 1*'s chapter 16) does not confirm such an

assumption. Rather he understands productive labour as labour that produces capital, which does not logically presuppose a wage-labour relationship. Facebook's and Google's waged workers do not create a commodity, but rather a platform that users access as "free lunch", whereas users' activities create a data commodity that is sold in order to generate profit and enable the accumulation of capital.

## Transport Costs

Marx (1885, 225–229) discusses transport costs especially in *Capital Volume 2*, chapter 3, section 3. Also in the *Grundrisse* he makes a similar argument—namely, that transport costs and transport labour produce surplus-value. So although the "*costs of circulation* proper (and they achieve a significant independent development in the money trade) are not reducible to productive labour time" (Marx 1857/1858 [English], 624–625), transport costs are of a different nature:

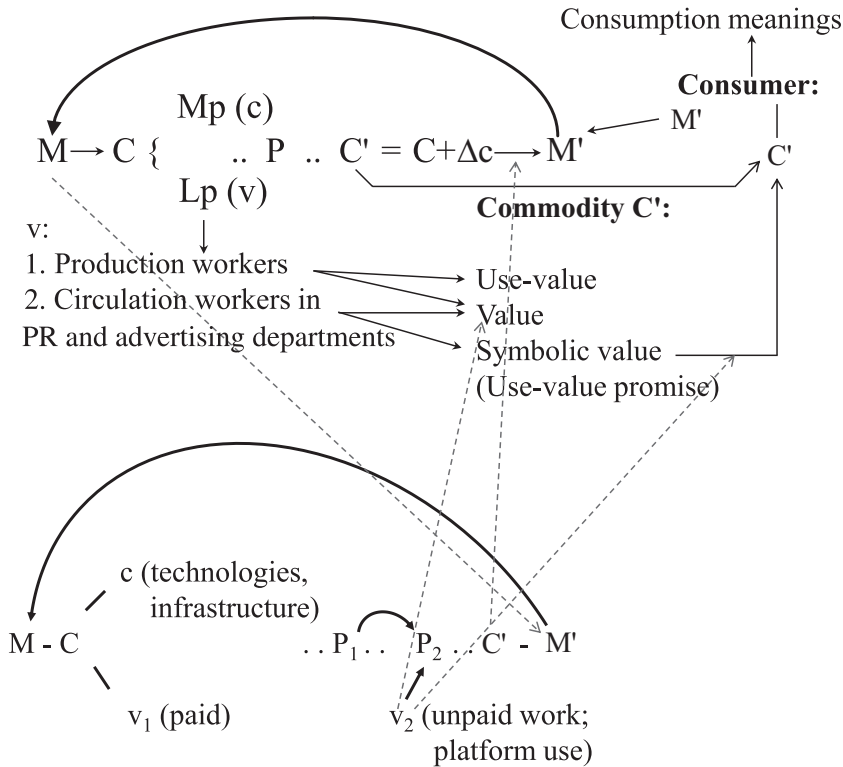
Transport to market (spatial condition of circulation) belongs in the production process. [...] Circulation proceeds in space and time. Economically considered, the spatial condition, the bringing of the product to the market, belongs to the production process itself. The product is really finished only when it is on the market. The movement through which it gets there belongs still with the cost of making it. It does not form a necessary moment of circulation, regarded as a particular value process, since a product may be bought and even consumed at the point of its production. But this spatial moment is important in so far as the expansion of the market and the exchangeability of the product are connected with it. (Marx 1857/1858, 533–534)

[Transport] gives the product a new use value (and this holds right down to and including the retail grocer, who weighs, measures, wraps the product and thus gives it a form for consumption), and this new use value costs labour time, is therefore at the same time exchange value. Bringing to market is part of the production process itself. The product is a commodity, is in circulation only when it is on the market. (Marx 1857/1858, 635)

## Ideological Transport and the Media

Commercial media link commodity ideologies to consumers—they "transport" ideologies to consumers—although it is unclear and not determined how the latter react and if the confrontation with commodity ideologies results in actual purchases. Facebook and other corporate social media are advertising companies that sell advertising space and user data as commodities to clients who want to present commodity ideologies to users and hope that the latter buy their commodities.

Most commodities have independent from their physical or informational nature a cultural component that is created by the cultural labour performed in advertising departments and agencies. The cultural dimension of a commodity is necessary ideological: It appeals to consumers' imagination and wants to make them connote positive images and feelings with the idea of consuming this commodity. Wolfgang Fritz Haug (1986) speaks in this context of the commodity's use-value promise: The sales and advertising ideology associated with a commodity promises specific positive life enhancement functions that the commodity brings with it and thereby conceals the commodity's exchange-value behind promises. The symbolic commodity ideology promises a use-value beyond actual consumption, an imaginary surplus and surplus enjoyment. These promises are detached from the actual use-value and are therefore a fictitious form of use-value. Capitalism's antagonism between use-value and exchange-value takes in the realm of the commodity aesthetic the form of a contradiction between use-value and appearances of use-value: As long as the consumer has not purchased a commodity, s/he can only imagine how using it actually is. Advertising makes use-values appear to be specific forms and promises specific qualities—it communicates the commodity aesthetic. The



**FIGURE A2.1** The economic relationship of Facebook and its advertising clients

commodity's appearance becomes more important than its being and is an instrument for capital accumulation. "The aesthetics of the commodity in its widest meaning—the sensual appearance and the conception of its use value—becomes detached from the object itself" (Haug 1986, 16–17).

Commercial media link commodity ideologies to consumers; they "transport" ideologies to consumers. Facebook and other corporate social media are advertising companies that sell advertising space and user data as commodities to clients who want to present commodity ideologies to users and hope that the latter will buy their commodities. The users' constant online activity is ideological transport labour necessary for running the targeting algorithms and for generating viewing possibilities and attention for ads' use-value promises. They do not transport a commodity in physical space from A to B; they rather organise a communication space that allows advertisers to communicate their use-value promises to potential customers. Figure A2.1 visualises the economic relationships of targeted advertising-based platforms such as Facebook and its advertising clients.

## The Transport of Commodities

The transport of a commodity has two parts:

1. The commodity's physical transport: In the case of information this means data transmission via cables, telecommunications networks, radio signals, satellite transmission, etc.
2. Informational transport: The transport of the information that the commodity exists and why it should be bought by the consumer. Advertising plays a crucial role in this form of transport.

The modern advertising industry came into existence around 1890 as part of the emergence of the “new ‘monopoly’ (corporate) capitalism” (Williams 1960/1969, 177) and took full effect in the 20th century with the rise of the culture industry, mass media, mass production, and mass consumption. Advertising did not play a central role in capitalism at the time of Marx, which is the reason he hardly discussed it. Given this fact, however, also means that for understanding advertising culture, we have to think with Marx about this phenomenon. The idea of audience labour as ideological transport labour is such an undertaking.

### 3. Machinery and the General Intellect in the “Fragment on Machines”

#### What Is the “Fragment on Machines”?

What some Marxist scholars term Marx’s “Fragment on Machines” is the section “Fixes Kapital und Entwicklung der Produktivkräfte der Gesellschaft” (Capital and the Development of Society’s Productive Forces) in the *Grundrisse*’s sixth and seventh notebooks (Marx 1857/1858 [German], 590–609; [English], 690–714). The “Fragment” was written in the first half of 1858 (Marx 1857/1858 [English], 697, 555). The earliest use of the term “Fragment on Machines” that I could trace in the English literature is Pier Aldo Rovatti’s 1973 article “The Critique of Fetishism in Marx’s ‘Grundrisse’”. An Italian translation of the “Fragment” was published in 1964 under the title “Frammento sulle Macchine” (Marx 1964).

#### Knowledge and General Work

Marx interprets in the “Fragment” technology as fixed constant capital that is an “alien power” (Marx 1857/1858 [English], 693) to the worker. He terms “science”, “knowledge”, and “technology” in production as part of fixed constant capital, the “accumulation of knowledge and of skill, of the general productive forces of the social brain” ([English], 694, in German: “Akkumulation des Wissens und des Geschicks, der allgemeinen Produktivkräfte des gesellschaftlichen Hirns”, [German], 594; “gesellschaftliches Hirn” can more precisely be translated as “societal brain”, but has been translated as “social brain”, which has a more micro-sociological connotation) and “general social labour” ([English], 694). The “transformation of the production process from the simple labour process into a scientific process [...] appears as a quality of fixed capital in contrast to living labour” (Marx 1857/1858 [English], 700).

Marx here takes up the issue of knowledge and scientific work as general work, which he also discusses in *A Contribution to the Critique of Political Economy* (Marx 1859, 278) and *Capital Volume 1* (Marx 1867, 667) and *Volume 3* (Marx 1894, 199; MEW 25, 113–114). General work is general because its results are not just consumed in one specific company or branch of industry, but throughout the entire economy. General work has “a scientific and at the same time general character” (Marx 1857/1858 [English], 612). Marx writes in the German version of the *Grundrisse* that “materielle Produktion” is “zugleich allgemeine Arbeit” when it has “wissenschaftlichen Charakter[s]” (Marx 1857/1858 [German], 512). The English translation of this passage is that “material production” is of “a scientific and at the same time general character” (Marx 1857/1858 [English], 612). It is misleading because it presents scientific and general work as two different activities, whereas Marx in the German original wrote that “material production” is “at the same time general work” when it has “a scientific character”.

#### Marx Anticipated the Emergence of an Information Economy

Marx anticipated the emergence of the important role of knowledge, science, and highly productive technologies such as the computer in production by arguing that capital’s inherent need to develop

the productive forces not just makes technology in production ever more important, but also results in a scientification of production and an increasing importance of knowledge labour: “machinery develops with the accumulation of society’s science, of productive force generally” ([English], 694). Wolfgang Fritz Haug (2010, 211) argues in this context that Marx’s concept of the general intellect was “prognostic–descriptive” of the emergence of computerisation and high-tech capitalism.

### Radovan Richta: The Scientific-Technological Revolution

Radovan Richta (1969) has based on Marx termed “general labour” the scientific and technological revolution. “Science is now penetrating all phases of production and gradually assuming the role of the central productive force of human society and, indeed, the ‘decisive factor’ in the growth of the productive forces” (Richta 1969, 28). “Logically, then—from the standpoint of the deeper linkages of the model—the chances of carrying out the scientific and technological revolution to the full lie with a society advancing towards communism” (Richta 1969, 53–54). Richta (1969) coined the notion of the scientific and technological revolution in the context of hopes for a democratic form of communism in light of the Prague Spring. The rise of the important role of science and the computer in production would constitute a scientific–technological foundation for the transition of capitalism to communism and the transition from authoritarian to human-centred communism.

The idea of the scientific and technological revolution can already be found in the *Grundrisse*. “But to the degree that large industry develops, the creation of real wealth comes to depend less on labour time and on the amount of labour employed than on the power of the agencies set in motion during labour time, whose ‘powerful effectiveness’ is itself in turn out of all proportion to the direct labour time spent on their production, but depends rather on the general state of science and on the progress of technology, or the application of this science to production” (Marx 1857/1858, 704–705). As a consequence of technological development, “the entire production process” becomes “the technological application of science” (Marx 1857/1858, 699).

### The Antagonism between Productive Forces and Relations of Production in the “Fragment”

The “Fragment on Machines” shows how modern technology reduces necessary labour time and thereby creates conditions for communism, free individuality, and a life based on free time as a source of wealth, but at the same time is embedded into capitalist class relations that have to set labour-time as the source of wealth so that the antagonism between the evermore socialised productive forces and the relations of production deepens the crisis-proneness of capitalism, the enslavement of labour, unemployment, and precarity:

[Under the conditions of capitalist technology, the worker] “steps to the side of the production process instead of being its chief actor. [. . .] as the great foundation–stone of production and of wealth. The theft of alien labour time, on which the present wealth is based, appears a miserable foundation in face of this new one, created by large-scale industry itself. As soon as labour in the direct form has ceased to be the great well-spring of wealth, labour time ceases and must cease to be its measure, and hence exchange value [must cease to be the measure] of use value. The surplus labour of the mass has ceased to be the condition for the development of general wealth, just as the non-labour of the few, for the development of the general powers of the human head. With that, production based on exchange value breaks down, and the direct, material production process is stripped of the form of penury and antithesis. The free development of individualities, and hence not the reduction of necessary labour time so as to posit surplus labour, but rather the general reduction of the necessary labour of society to a

minimum, which then corresponds to the artistic, scientific etc. development of the individuals in the time set free, and with the means created, for all of them. (Marx 1857/1858, 705–706)

### The Antagonism between Necessary Labour and Surplus Labour

Marx continues his analysis by describing a capitalist antagonism between necessary labour (that technology evermore reduces) and surplus labour (that capital tries to evermore increase):

Capital itself is the moving contradiction, [in] that it presses to reduce labour time to a minimum, while it posits labour time, on the other side, as sole measure and source of wealth. Hence it diminishes labour time in the necessary form so as to increase it in the superfluous form; hence posits the superfluous in growing measure as a condition—question of life or death—for the necessary. On the one side, then, it calls to life all the powers of science and of nature, as of social combination and of social intercourse, in order to make the creation of wealth independent (relatively) of the labour time employed on it. On the other side, it wants to use labour time as the measuring rod for the giant social forces thereby created, and to confine them within the limits required to maintain the already created value as value. Forces of production and social relations—two different sides of the development of the social individual—appear to capital as mere means, and are merely means for it to produce on its limited foundation. In fact, however, they are the material conditions to blow this foundation sky-high. (Marx 1857/1858, 706)

### Technology, Time, Capitalism, Communism

Marx ascertains a capitalist antagonism between the tendency of technology to reduce necessary labour time and the capitalist tendency to turn all labour time into surplus labour and argues that modern technology creates the foundation of a communist society in which free time and free activity beyond necessity is maximised and the source of wealth:

[Capital] increases the surplus labour time of the mass by all the means of art and science [. . .] It is thus, despite itself, instrumental in creating the means of social disposable time, in order to reduce labour time for the whole society to a diminishing minimum, and thus to free everyone's time for their own development. But its tendency always, on the one side, to create disposable time, on the other, to convert it into surplus labour. If it succeeds too well at the first, then it suffers from surplus production, and then necessary labour is interrupted, because no surplus labour can be realized by capital. The more this contradiction develops, the more does it become evident that the growth of the forces of production can no longer be bound up with the appropriation of alien labour, but that the mass of workers must themselves appropriate their own surplus labour. Once they have done so—and disposable time thereby ceases to have an antithetical existence—then, on one side, necessary labour time will be measured by the needs of the social individual, and, on the other, the development of the power of social production will grow so rapidly that, even though production is now calculated for the wealth of all, disposable time will grow for all. For real wealth is the developed productive power of all individuals. The measure of wealth is then not any longer, in any way, labour time, but rather disposable time. (Marx 1857/1858 [English], 708)

Marx adds that “[r]eal economy [. . .] consists of the saving of labour time” so that there can be “an increase of free time, i.e. time for the full development of the individual” (Marx 1857/1858 [English], 711). Marx ascertains in the *Grundrisse* that communism requires a technological foundation so



that society can be based on the principle “From each according to his abilities, to each according to his needs!” (Marx 1875, 87), which he in 1875 formulated in the *Critique of the Gotha Programme*.

Roman Rosdolsky (1977, 427–428) comments in his study of the *Grundrisse*:

It is hardly necessary today—in the course of a new industrial revolution—to emphasise the prophetic significance of this enormously dynamic and essentially optimistic conception. For the dreams of the isolated German revolutionary in his exile in London in 1858 have now, for the first time, entered the realm of what is immediately possible. Today, for the first time in history, thanks to the developments of modern technology, the preconditions for a final and complete abolition of the ‘theft of alien labour-time’ actually exist; furthermore, the present period is the first in which the development of the productive forces can be carried so far forward that, in fact, in the not too distant future it will be not labour-time, but rather disposable time, by which social wealth is measured.

## The General Intellect

### The General Intellect Is the Crucial Concept in the “Fragment”

Nature builds no machines, no locomotives, railways, electric telegraphs, self-acting mules etc. These are products of human industry; natural material transformed into organs of the human will over nature, or of human participation in nature. They are organs of the human brain, created by the human hand; the power of knowledge, objectified. The development of fixed capital indicates to what degree general social knowledge has become a direct force of production, and to what degree, hence, the conditions of the process of social life itself have come under the control of the general intellect and been transformed in accordance with it. To what degree the powers of social production have been produced, not only in the form of knowledge, but also as immediate organs of social practice, of the real life process. (Marx 1857/1858 [English], 706)

Already Rosdolsky wrote in his book *The Making of Marx’s “Capital”*, which was published in 1968, that the general intellect passage shows that “the development of machinery—although leading under capitalism only to the oppression of workers—offers, in fact, the surest prospect for their future liberation, by facilitating that radical reduction of working time, without which the abolition of class society would remain mere words” (Rosdolsky 1977, 243).

The “Fragment” anticipated many ideas that Marx (1867, 492–639) formulated in *Capital Volume 1*, chapter 15, “Machinery and Large-Scale Industry”: technology as fixed constant capital; the concept of the machine system; technology as means of alienation and rationalisation in capitalism and material foundation of communism; the dialectic of modern technology; technology in the context of the antagonism between productive forces and relations of production, technology, and crises.

## 4. The Connection of the “Fragment” to Other Sections in the *Grundrisse*

Aspects of knowledge and technology are in the *Grundrisse* not just limited to the “Fragment”, but also occur outside of it. This section discusses some examples.

Marx first mentions the antagonistic relationship of machinery and labour time not in the “Fragment on Machines” (which can be found in “Notebooks VI/VII”), but in the section on “Surplus-Value and Profit” of “Notebook IV” (Marx 1857/1858 [English] 389, 398–401; Marx 1857/1858 [German], 303, 312–315).

In the section on the “Circuit of Capital” in “Notebook V”, Marx introduces the notion of the “*general conditions of production*” (530) and argues that capital only organises them if it is profitable and

not too expensive to do so and otherwise “shifts the burdens on the shoulders of the state” (531). They include the “means of communication” that are “physical conditions of circulation” (533). Marx here basically introduces the ideas of the commons, including the communication commons, and of the commodification of the commons (public works’ “migration into the domain of the works undertaken by capital”, 531).

In “Notebook IV”, Marx introduces the dialectical idea that capital finds in itself and sets itself barriers that it has to strive to overcome (Marx 1857/1858 [English], 405–423; [German], 318–338). Capital faces barriers such as necessary and surplus labour time, national borders and regulations, circulation time, consumption capacities, and money and exchange value that limit use-value. The effects are crises that capital tries to overcome, which creates new limits and conditions of crisis. Capital’s “production moves in contradictions which are constantly overcome but just as constantly posited”. It drives “towards its own suspension” and “encounters barriers in its own nature” (Marx 1857/1858 [English], 410). In “Notebook V”, Marx argues that capitalism’s dialectic of boundaries also concerns the productive forces, including the production of knowledge: “Capital posits the production of wealth itself and hence the universal development of the productive forces, the constant overthrow of its prevailing presuppositions, as the presupposition of its reproduction. [. . .] every degree of the development of the social forces of production, of intercourse, of knowledge etc. appears to it only as a barrier which it strives to overpower” (Marx 1857/1858 [English], 541; [German], 447).

Marx also discusses the antagonistic character of technology in the section “Das Kapital als Frucht bringend” (Capital as Fructiferous) of “Notebook VII” (Marx 1857/1858 [German], 637–669; [English], 745–778), where he says that the antagonism between technological development of the productive forces and the capitalist relations of production results in “explosions, cataclysms, crises” ([English], 750), “bitter contradictions, crises, spasms” ([English], 749).

In the next section I will reflect on debates about the “Fragment”.

## 5. Cultural and Digital Labour in the Context of the Marxist Debate on the “Fragment” and the General Intellect

The debate about the “Fragment” and the general intellect has especially focused on (a) the concept of immaterial labour, (b) the critique of the notion of immateriality, (c) questions concerning the relationship of technology and human practice in society, (d) elite and immiserated workers, and (e) the law of value. I will in this section explore connections of this discussion to the political economy of digital labour.

### Immaterial Labour

Antonio Negri (1991) did not discuss the notion of the general intellect in his book on the *Grundrisse*, but did so in a number of other publications. He defines it as “modes of productive expression that are increasingly immaterial and intellectual” (Negri 2008, 116). Hardt and Negri (2000, 29–30, 364–367) associate with Marx’s concept of general intellect the rise of informational capitalism and connect it to the rise of what they term “immaterial labour”, a term introduced by Maurizio Lazarato (1996, 132), who defines it as “labor that produces the informational and cultural content of the commodity”. “General intellect is a collective, social intelligence created by accumulated knowledges, techniques, and know-how. The value of labor is thus realized by a new universal and concrete labor force through the appropriation and free usage of the new productive forces” (Hardt and Negri 2000, 364).

Paolo Virno (1996a, 21) argues that the general intellect extends from science and technology to communication, language, and the media (see also Virno 2007). It would be the foundation of “social

cooperation” (Virno 1996b, 194) and in contemporary capitalism result in “all wage labor” having “something of the ‘performing artist’ about it” (195). “The general intellect manifests itself today, above all, as the communication, abstraction, self-reflection of living subjects” (Virno 2004, 65) and is for Virno not congealed in fixed capital. Christian Marazzi (2008, 44) makes the same point: “In post-Fordism the general intellect is not fixed in machines, but in the bodies of workers. The body has become, if you will, the tool box of mental work”.

### (A) The Concept of Immaterial Labour and Its Implications

A *first* important dimension of the concept of the general intellect as immaterial labour is that because of this type of labour’s networked and cooperative organisation and knowledge’s peculiar characteristics that support convergences, exploitation, value generation, and productive labour are not limited to wage-labour. This analysis resembles the arguments made by Marxist feminism and the theory of the new international division of labour that already in the 1970s and 1980s argued that labour in the Global South and housework are crucial for global value generation. It allows a connection to the theory of audience and digital labour.

Audiences of advertising-financed broadcast media and users of corporate social media such as Facebook, YouTube, Twitter, Weibo, Pinterest, Blogspot, and Instagram are nonpaid audiences and digital workers who create attention and data that is sold as commodity. They are productive workers in the sense of the understanding Marx grounded in the *Grundrisse* and *Capital Volume 1*, chapter 16: Their labour creates its own opposite—namely, commercial media companies’ capital. They together with paid employees form commercial media’s collective labourer, who is exploited in order to generate these companies’ value and profits. Facebook and its likes are social factories, in which social workers perform unremunerated information labour. Social and mobile media advance contemporary capitalism’s tendency towards creating boundaries between production/consumption, labour-time/leisure time, labour/play, office and factory/home, private/public, production/reproduction that blur and converge under the rule of capital so that we perform value-generating labour in many spaces outside of offices and factories at irregular times under conditions that foster precarious, informal, unrecognised, unremunerated, and casual labour.

Audience and digital labour stand in an antagonism to each other: Companies’ advertising expenditures grew in the period of 2009 to 2013 by 25.8%: Online advertising’s annual compound growth rate was 18.9%, whereas the one of newspaper advertising was 1.35% (data source: Ofcom 2014). In times of crisis, companies seem to consider targeted online advertising a more secure investment than traditional advertising, which results in the tendency that exploitation of audience labour turns into digital labour. But whereas Facebook and Google are highly profitable companies, other platforms such as Twitter and Weibo have thus far only made losses. The exploitation of digital labour creates value, but this value can only be turned into profit if users give attention to and click on online ads, which is not automatically to a sufficient degree the case. Companies’ marketing departments are at the moment optimistic about investing in targeted online ads, but this confidence could quickly change in case that the one or the other social media company folds because its profits do not live up to stock market valuations.

### (B) The Critique of the Notion of Immateriality: Materialism and Idealism

A *second* important question about the general intellect concerns philosophical materialism and idealism: In a materialist philosophy, matter is the process-substance of the world (Fuchs 2003): Systems are constituted by permanent reproduction and the creation of novelty that emerges out of existing structures. Production guarantees human existence and reproduction. The world is material because it has the capacity to produce itself and new forms of organisation. Society is material because in it

humans produce structures, their own sociality, and ever-newer human practices so that society can reproduce itself and exist over time. To speak of immaterial labour introduces a dualist ontology that separates the world into a material and an immaterial substance.

If there are two substances, then the ground of the world can no longer be adequately specified, which, however, is according to the law of ground needed for any consistent philosophy. If there are two substances, then it cannot be explained what the unity, foundation, and ground of the world are in the last instance. One must then either leave the world unexplained or assume that an external force such as God created it. Avoiding such dualism and idealism requires a materialist concept of the world that sees the whole world and all of its systems as material and matter as a self-referential and self-producing substance. Matter is a *causa sui*: It is its own cause and enables the self-organisation of the world. The very notion of immaterial labour is philosophically idealist. Ideas are nonphysical, but material. They are generated by the brain, which is a physical system, and in the social relations of humans, who as species-beings create the social world by work and communication.

George Caffentzis (2013, 176–200) argues in this context that no labour is immaterial because all labour requires a physical foundation. Hardt and Negri would therefore “spiritualize the machine” (Caffentzis 2013, 200). Digital labour on social media is not immaterial labour, but rather information labour that as a form of materiality creates information as a non-physical good that can only be produced, disseminated, and consumed with the help of physical technologies such as computers, mobile phones, and fiberoptic cables, which are powered by energy consumption.

### (C) Technology and Human Practice

*Third*, the concept of the general intellect as immaterial labour faces the danger of a technologically deterministic concept of history and revolution that sees communism as the automatic result of the development of the technological productive forces. Sylvia Federici (2012, 95) argues that the “Fragment” bears the threat of a “technologicist concept of revolution, where freedom comes through the machine” and that comes along with a focus on wage-labour as a revolutionary subject that neglects the “importance of reproductive work”. Also Pier Aldo Rovatti warns against interpreting the “Fragment” in a techno-deterministic and fetishist manner, which reduces the relations of production to “moments within the dynamic of the productive forces” (Rovatti 1973, 60; for a recent formulation of this criticism, see Tomba and Bellofiore 2014). The collective worker constituted by the general intellect would not automatically become a “collective subject” (62). One must in this context see that Marx writes: “With that, production based on exchange value breaks down” (Marx 1857/1858 [English], 705).

This formulation has again and again resulted in controversies. Michael Heinrich (2014) interprets it as meaning that Marx in the *Grundrisse* had a “one-sided conception of crisis” (197) and predicted that the employment of machinery in capitalism “should have the consequence that capitalist production [...] collapses” (207). But one must see that with the formulation “with that” Marx means in reference back to the preceding sentence a condition where the “surplus labour of the mass has ceased to be the condition for the development of general wealth” (705). So when he speaks of a breakdown in the “Fragment” he does not mean an automatic collapse of capitalism, but rather that exchange value collapses within communism. The establishment of communism, however, presupposes a conscious revolutionary sublation of capitalism. The “Fragment” does not formulate an automatic breakdown of capitalism.

It is true that when Marx wrote the *Grundrisse*, he was optimistic that capitalism could in the course of the crisis that started in 1857 come to an end, which is evident from a letter to Engels from December 8, 1857: “I am working like mad all night and every night collating my economic studies so that I at least get the outlines [“Grundrisse” in the German original; MEW 29, 225] clear before the deluge” (MECW 40, 217). He did, however, not assume that a breakdown of capitalism

is the effect of structural contradictions, but that it can only, but does not automatically and with necessity have to, break down in the course of class struggles that respond to crises. Consciousness and activity are crucial. Marx therefore not just speaks of the productive forces, but of both “forces of production and social relations” as the “material conditions to blow this foundation [capitalism] sky-high” (Marx 1857/1858, 706). Note that an objective material condition is a precondition, but not an automatism. Consciousness and praxis are decisive. Therefore Marx stresses that the “recognition [*Erkennung*] of the products as its own, and the judgement that its separation from the conditions of its realization is improper—forcibly imposed—is an enormous [advance in] awareness [*Bewusstsein*]” and is “itself the product of the mode of production resting on capital, and as much the knell to its doom” (463). Marx here connects the metaphor of the death bell with subjectivity (recognition, awareness, consciousness), which shows that he saw conscious political action based on material foundations as interacting aspects of revolution.

Moishe Postone (2008) stresses correctly that Marx is neither romantically affirming nor rejecting modern technology, but rather assumes that “the potential of the system of production developed under capitalism could be used to transform that system itself” (134). The deepening gap between material potentials and reality that expresses itself in crises can only be overcome through social struggles. Digital labour on social media is indicative of a high socialisation of the means of communicative production that within capitalist class relations furthers human exploitation and deepens class society, but that at the same time promises and creates potentials for a digital communist society that can only be created in and through political praxis, which is again no automatism and can be forestalled by ideology, violence, and repression.

#### (D) Elite and Immiserated Workers

*Fourth*, there have been discussions about privileged and immiserated labour of the general intellect. Autonomist Marxists such as George Caffentzis (2013) and the Midnight Notes Collective criticise Negri and his comrades’ version of the general intellect as immaterial labour by arguing that it tends to focus on privileged Western high-tech workers and ignores the exploitation of the labour of house workers and slaves and other super-exploited workers in the global sweatshop economy. Caffentzis (2013, 79) says that computerisation and robotisation require the enclosure of “factories, lands, and brothels in the Third World” in order to “increase the total pool of surplus labor” and counteract the tendency of the profit rate to fall. The “computer requires the sweatshop, and the cyborg’s existence is premised on the slave” (79).

Nick Dyer-Witheford (2005) suggests based on a reading of Negri and Caffentzis a “Cyber-Negri beyond Negri” perspective that conceives “‘immaterial’, ‘material’<sup>1</sup> and ‘immiserated’ work as sectors of a broader class composition of ‘universal labor’” (Dyer-Witheford 2005, 157) that forms a global worker who has the potential to act as a digital front against capital (Dyer-Witheford 2014). Building on Caffentzis and Negri allows a materialist concept of cultural and digital labour that avoids idealism and Western-centric narrowness. Such an approach can also build on Raymond Williams’s approach of Cultural Materialism, which argues that “[c]ultural work and activity are not [...] a superstructure” (1977, 111) and that cultural and mental labour are “social and material” (1989, 206) (see Fuchs 2015).

Culture requires the production, circulation, and consumption of meaning as well as institutions and technologies that enable these processes. Cultural labour as materialist concept therefore covers both labour that produces culture’s infrastructures and content.

“Cultural work” is a term that encompasses organisational levels of work that are at the same time distinct and dialectically connected (see Figure A2.2): Cultural work has an emergent quality—namely, information work—that creates content that is based on and grounded in physical cultural work, which creates information technologies through agricultural and industrial work processes. Physical

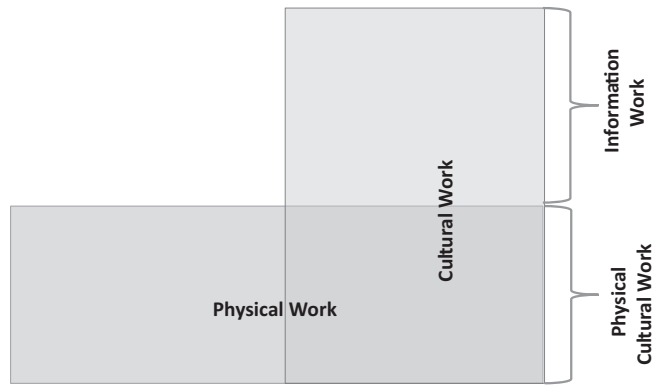


FIGURE A2.2 A model of cultural work

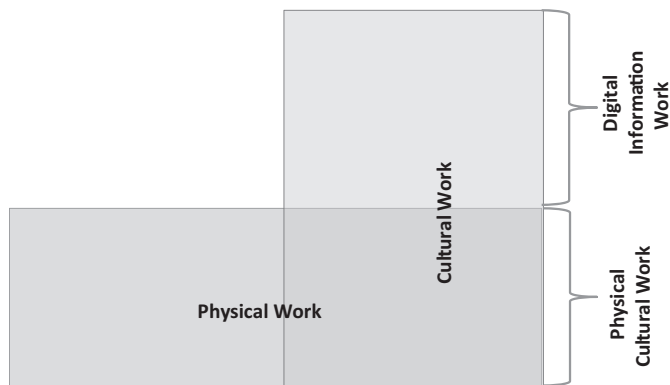


FIGURE A2.3 A stage model of digital work

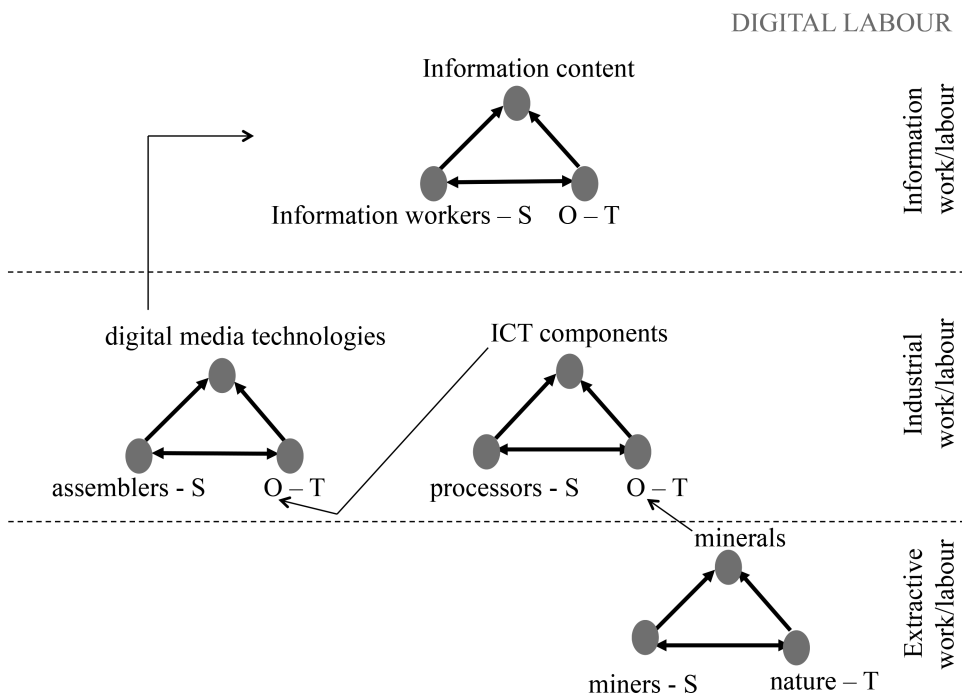


FIGURE A2.4 The network of cycles of digital labour

work takes place inside and outside of culture: It creates information technologies and its components (cultural physical work) as well as other products (noncultural physical work) that do not primarily have symbolic functions in society (such as cars, toothbrushes, or cups).

Digital work is a specific form of cultural work that creates and uses digital media. Digital labour is an alienated form of digital work. Just like cultural work, digital work encompasses both physical and information work (Figure A2.3).

Each work process consists of subjects that with the help of objects of work and technologies create products. Digital labour is organised in the form of an international division of digital labour (IDDL), which encompasses a complex network of interlinked cycles of production (see Figure A2.4) in which miners who are partly slaves in Congolese mines extract minerals that in a second step are by industrial assemblage workers, such as the highly exploited workers in the Chinese Foxconn and Pegatron factories, assembled into components and digital media technologies that information workers, such as Google's labour aristocracy, low-paid software engineers in India, precarious freelancers, and unpaid social media users, use for creating content and data (for details, see Fuchs 2014a, 2015). Digital labour is organised in an IDDL, which encompasses different modes of production (such as wage-labour, unpaid labour, precarious labour, slave-work, etc.) and different modes of organisation of the productive forces (agricultural/industrial/informational work). The general intellect that circulates on the Internet and via digital media requires a collective digital worker that is also a global worker. Digital capital exploits manifold forms of digital labourers, and they have the potential to resist their own exploitation if digital workers of the world manage to unite (Mosco and McKercher 2009).

## (E) The Law of Value

*Fifth*, there have been discussions about the applicability of the law of value to the general intellect. Negri (1991, 172) argues that in the *Grundrisse* the "Law of Value dies". Virno (2004, 100) says that the law of value is "shattered and refuted by capitalist development itself". Hardt and Negri (2004, 145) argue that the "temporal unity of labor as the basic measure of value today makes no sense". Vercellone (2010, 90) writes that "cognitive capitalism" has resulted in the "crisis of the law of value" and "a crisis of measurement that destabilizes the very sense of the fundamental categories of the political economy; labor, capital and obviously, value" (90). He ascertains that the general intellect has brought about "the possibility of a direct transition to communism" (Vercellone 2007, 15) and the need for a "passage from a theory of time-value of labour to a theory of knowledge-value" (31). Arvidsson and Colleoni say that the law of value does not apply to "immaterial/intangible wealth" because this form of wealth would be produced in cooperation and its value would be determined by affects and intersubjective judgments so that an "affect-based law of value" (Arvidsson and Colleoni 2012, 142) would emerge.

Rosdolsky (1977, 428) in contrast to these authors writes in his book about the *Grundrisse* that in the "Fragment" Marx had the "withering away of the law of value under socialism" in mind, but not under capitalism. Moishe Postone (2008, 126) stresses the crisis of value in capitalism is "not simply superseded by a new form of wealth", but rather value "remains the necessary structural precondition of capitalist society". "Capitalism *does* give rise to the possibility of its own negation, but it *does not* automatically evolve into something else" (Postone 2008, 127). Massimo De Angelis (2007, 167) argues against Hardt and Negri that assuming that the law of value no longer applies today overlooks that capital as such "is constituted through a particular mode of *measuring* life activity". This is also the reason why the process of commodification has resulted in the emergence of "an immense battery of tests and examinations" (Harvie 2005, 149). So, for example, the prevalence of "task-specific contracts with temporal deadlines" in the information industries shows that information labour is "a process in time that can be (*and is*) measured" (Caffentzis 2013, 111; see also Caffentzis 2005 for a critique of Hardt and Negri's assumption that value has become immeasurable). Tony Smith (2014b) argues in a discussion of Vercellone's and Virno's approach that although there are nonprofit digital media projects operating outside the law of value, the world of digital media features a lot



of exploited labour. He writes that also in an age of “mass intellectuality”, “Marx’s value-theory will retain descriptive accuracy and explanatory power” as long as there are features such as that the mediation of social reproduction by “the sale of commodities for money” (222).

The assumption that the law of value no longer applies today is not feasible because this law is a foundation for the existence of capitalism. Claims about the law’s withering-away are based on a specific interpretation of a passage from Marx’s *Grundrisse* in which Marx says that “labour time ceases and must cease to be” the measure of wealth (Marx 1857/1858, 705). He in the same passage makes clear that he is talking about a situation in which the “mass of workers” has appropriated “their own surplus labour” (Marx 1857/1858, 708)—that is, about a communist society. The prophets of the end of law of value in contrast interpret this passage in the “Fragment” as meaning that the law of value has come to an end within capitalism and that technology has created a communism of capital (Virno 2004, 110–111; Boutang 2011, 7) so that it merely needs to cast its capitalist skin in order to enable a fully communist society. Marx talks about a society, in which “production based on exchange value breaks down” (Marx 1857/1858, 705)—a communist society. He describes how the rise of technology and knowledge in capitalism advances the antagonism between necessary and surplus labour time and the productive forces and relations of production and that this antagonism creates the foundations of a communist society, in which free time is the measure of wealth and available to a maximum degree for all.

Morini and Fumagalli (2010) argue that the blurring of working time/life time, work place/life place, production/reproduction, and production/consumption necessitates a life theory of value because contemporary capitalism puts life to work. They do, however, leave open the question if average life value depends on measurable time or not. Given that all human activities and the number of humans in the world are always finite and that work takes place in space-time, one can argue that even a blurring of boundaries between dualities still requires a labour theory of value (Fuchs 2014a, 2015).

On Facebook and other commercial social media, the law of value means that the more time a certain group spends on the platform, the more valuable the corresponding data commodity gets on average. A group that on average spends a lot of minutes per day on Facebook (e.g., the group of those aged 15–25) compared to another group (e.g., the group of those aged 75–85) constitutes a more valuable data commodity because (a) it has a higher average labour/online time per day, which generates more data that can be sold, and (b) it spends more time online, during which targeted ads are presented to this group.

## 6. Conclusion

The *Grundrisse* is of high importance as a theoretical foundation for understanding digital labour and digital capitalism. Marx’s concepts of productive and transport labour in the *Grundrisse* help us come to grips with the political economy of targeted online advertising. The *Grundrisse*’s “Fragment on Machines” should best not be read in isolation, but as a complement to a reading of *Capital* and the *Grundrisse*’s other notebooks.

The *Grundrisse* help us especially in respect to five dimensions of digital labour:

1. Digital labour on social media is a manifestation the general intellect that expresses the existence of a social factory in contemporary capitalism.
2. Digital labour is not an immaterial but a material aspect of production.
3. Digital labour is a manifestation of the general intellect’s antagonism that creates foundations of communism and deepens exploitation, but does not automatically sublate capitalism, which points towards the need for conscious political praxis.
4. Digital labour is organised in the form of an international division of labour.
5. The law of value has not ceased to exist on social media, but rather expresses its antagonistic character in the online world.



Understanding digital labour requires what Karl Heinz Roth and Marcel van der Linden (2014) call a dynamic labour theory of value, in which all “persons who find themselves within the embattled process of expropriation, disciplining and employment/valorisation of their labour-capacity, constitute the global proletariat, the multiverse of the exploited” (478). Online media results in capitalism both in new forms of commodification and potentials for the “counter-usage of information technology” (Dyer-Witheford 1999, 228). Digital media change the human species-being towards the general intellect and point “unprecedented intensification of Empire, but also possibly to exodus from it” (Dyer-Witheford and de Peuter 2009, 229). The *Grundrisse* in combination with *Capital* can help us to come to grips with digital capitalism’s contradictions and are excellent intellectual tools in the struggle for the transition from digital capitalism to digital communism.

Digital labourers are a “collective labourer” (Marx 1867, 644) conducting “communal or combined labour” (Marx 1857/1858, 470). They are by capital’s rule confined to the status of “isolated worker[s]” and “alien objectivity”. They are dominated by capital and machinery that form an “*animated monster*” (470). But due to capital’s immanent barriers digital labour also contributes to the strengthening of the potentials for the “antithesis to political economy—namely socialism and communism” (884). Digital capitalism’s negativity can only be negated into a new form of existence in and through class struggles.

## Exercises for Appendix 2

Group exercise (G)

Project exercise (P)



**Key Categories: General Intellect, Machinery**

### Exercise Appendix 2.1 (G)

Read the following and discuss the questions below.

Marx, Karl. 1857/1858. Fragment on machines. In *Grundrisse*, 690–714. London: Penguin.

- How exactly does Marx define the general intellect?
- Discuss how the category of the general intellect matters in contemporary society, where digital media, the computer, the Internet, and knowledge work have come to play an important role.
- What are the antagonisms of labour time that Marx describes in the “Fragment”? What role do technology and the general intellect play in this context?
- What kind of antagonisms of labour time can we observe in contemporary informational capitalism? How do they express themselves? How can they be overcome politically?

### Exercise Appendix 2.2 (P)

Work in groups: Conduct a literature search for articles about Marx’s concept of the general intellect that have been published in the past 10 years.

Compare how the authors of these articles argue that this concept matters or does not matter today. Make a list of commonalities and differences of the arguments they employ. Assess the different opinions and views.

## Note

- 1 In my view it is best to distinguish between physical and nonphysical work instead of material and immaterial labour if one wants to characterise human activity according to its product.

# REFERENCES AND FURTHER READINGS

- Adorno, Theodor W. 1968/2003. Late capitalism or industrial society? The fundamental question of the present structure of society. In *Can one live after Auschwitz?*, ed. Rolf Tiedemann, 111–125. Stanford, CA: Stanford University Press.
- Adorno, Theodor W. 1973. *Negative dialectics*. London: Routledge.
- Althusser, Louis. 1969. *For Marx*. London: Verso.
- Althusser, Louis. 1993. *The future lasts forever: A memoir*. New York: The New Press.
- Althusser, Louis and Étienne Balibar. 1970. *Reading Capital*. London: NLB.
- Amin, Samir. 1974. Accumulation and development: A theoretical model. *Review of African Political Economy* 1 (1): 9–26.
- Amin, Samir. 1976. *Unequal development: An essay on the social formations of peripheral capitalism*. New York: Monthly Review Press.
- Amin, Samir. 1997. *Capitalism in the age of globalization: The management of contemporary society*. London: Zed Books.
- Amin, Samir. 2010. *The law of worldwide value*. New York: Monthly Review Press.
- Andersen, Esben Sloth. 2009. *Schumpeter's evolutionary economics: A theoretical, historical and statistical analysis of the engine of capitalism*. London: Anthem Press.
- Anderson, Kevin B. 2010. *Marx at the margins: On nationalism, ethnicity, and non-Western societies*. Chicago: University of Chicago Press.
- Aneesh, A. 2006. *Virtual migration: The programming of globalization*. Durham: Duke University Press.
- Arendt, Hannah. 1958. *The human condition*, 2nd edition. Chicago: University of Chicago Press.
- Arthur, Christopher J. 2004. *The new dialectic and Marx's Capital*. Leiden: Brill.
- Árvay, János. 1994. *The Material Product System (MPS): A retrospective*. In *The accounts of nations*, ed. Z. Kenessey, 218–236. Amsterdam: IOS Press.
- Arvidsson, Adam and Eleanor Colleoni. 2012. Value in informational capitalism and on the Internet. *The Information Society* 28 (3): 135–150.
- Banaji, Jairus. 2011. *Theory as history: Essays on modes of production and exploitation*. Chicago: Haymarket Books.
- Baran, Paul A. and Paul M. Sweezy. 1966. *Monopoly capital: An essay on the American economic and social order*. New York: Monthly Review Press.
- Baudrillard, Jean. 1981. *For a critique of the political economy of the sign*. St. Louis, MO: Telos Press.
- Bell, Daniel. 1974. *The coming of post-industrial society*. London: Heinemann.
- Bellofiore, Ricardo, Guido Starosta, and Peter D. Thomas, eds. 2014a. In *Marx's laboratory: Critical interpretations of the Grundrisse*. Chicago: Haymarket Books.
- Bellofiore, Ricardo, Guido Starosta, and Peter D. Thomas. 2014b. Introduction: In *Marx's laboratory*. In *In Marx's laboratory: Critical interpretations of the Grundrisse*, ed. Ricardo Bellofiore, Guido Starosta, and Peter D. Thomas, 1–14. Chicago: Haymarket Books.
- Bentham, Jeremy. 1781. *An introduction to the principles of morals and legislation*. Kitchener: Batoche.

- Bidet, Jacques. 2005. The dialectician's interpretation of Capital. *Historical Materialism* 13 (2): 121–146.
- Bidet, Jacques. 2007. *A reconstruction project of the Marxian theory: From Exploring Marx's Capital (1985) to Alter-marxisme (2007), via Théorie Générale (1999) and Explication et reconstruction du Capital (2004)*. <http://jacques.bidet.pagesperso-orange.fr/londongla.htm> (accessed July 28, 2015).
- Bidet, Jacques. 2009. *Exploring Marx's Capital: Philosophical, economic, and political dimensions*. Chicago: Haymarket Books.
- Bourdieu, Pierre. 1977. *Outline of a theory of practice*. Cambridge: Cambridge University Press.
- Bourdieu, Pierre. 1986a. *Distinction: A social critique of the judgement of taste*. New York: Routledge.
- Bourdieu, Pierre. 1986b. The (three) forms of capital. In *Handbook of theory and research in the sociology of education*, ed. John G. Richardson, 241–258. New York: Greenwood Press.
- Boutang, Yann Moulrier. 2011. *Cognitive capitalism*. Cambridge: Polity.
- Boyer, Robert. 1988. Technical change and the theory of “regulation”. In *Technical change and economic theory*, ed. Giovanni Dosi, Christopher Freeman, Richard Nelson, Gerald Silverberg, and Luc L. Soete, 67–94. London: Pinter.
- Braverman, Harry. 1974/1998. *Labor and monopoly capital*. New York: Monthly Review Press.
- Briggs, Asa and John Callow. 2008. *Marx in London*. London: Lawrence and Wishart.
- Caffentzis, George. 2005. Immeasurable value? An essay on Marx's legacy. *The Commoner* 5: 87–114.
- Caffentzis, George. 2013. *In letters of blood and fire: Work, machines, and the crisis of capitalism*. Oakland, CA: PM Press.
- Callinicos, Alex. 2014. *Deciphering capital. Marx's Capital and its destiny*. London: Bookmarks.
- Carchedi, Guglielmo and Michael Roberts. 2013. A critique of Heinrich's “Crisis theory, the law of the tendency of the profit rate to fall, and Marx's studies in the 1870s”. *Monthly Review Online*. <http://monthlyreview.org/commentary/critique-heinrichs-crisis-theory-law-tendency-profit-rate-fall-marxs-studies-1870s#en1> (accessed on July 28, 2015).
- Carstensen, Peter H. and Kjeld Schmidt. 1999. *Computer supported cooperative work: New challenges to systems design*. [http://www.cscw.dk/schmidt/papers/cscw\\_intro.pdf](http://www.cscw.dk/schmidt/papers/cscw_intro.pdf) (accessed on August 7, 2014).
- Chotiner, Isaac. 2014. “Marx? I never really managed to read it”—an interview with Thomas Piketty. *New Statesman Online*, May 6. <http://www.newstatesman.com/politics/2014/05/marx-i-never-really-managed-read-it-interview-thomas-piketty> (accessed on July 28, 2015).
- Cleaver, Harry. 2000. *Reading Capital politically*. Leeds: Anti/Theses.
- Collins, Sean. 2014. Pricking the Piketty bubble. *Spiked*, May 9. [http://www.spiked-online.com/review\\_of\\_books/article/pricking-the-Piketty-bubble/14997#.U4KWPy8UYWE](http://www.spiked-online.com/review_of_books/article/pricking-the-Piketty-bubble/14997#.U4KWPy8UYWE) (accessed on July 28, 2015).
- Dalla Costa, Mariarosa and Selma James. 1972. *The power of women and the subversion of community*. Bristol: Falling Wall Press.
- De Angelis, Massimo. 2007. *The beginning of history: Value struggles and global capital*. London: Pluto.
- Demie, Feyisa. 2014. *The educational attainment of white working class pupils*. London: Lambeth Research and Statistics Unit.
- Despain, Hans G. 2014. Review of Thomas Piketty's “Capital in the twenty-first century”. *Marx & Philosophy Review of Books*. <http://marxandphilosophy.org.uk/reviewofbooks/reviews/2014/1005> (accessed on July 28, 2015).
- Douthat, Rose. 2014. *Marx rises again*. *New York Times Online*, April 19. [http://www.nytimes.com/2014/04/20/opinion/sunday/douthat-marx-rises-again.html?\\_r=0](http://www.nytimes.com/2014/04/20/opinion/sunday/douthat-marx-rises-again.html?_r=0) (accessed on July 28, 2015).
- Dussel, Enrique. 2008. The discovery of the category of surplus value. In *Karl Marx's Grundrisse: Foundations of the critique of the political economy 150 years later*, ed. Marcello Musto, 67–78. New York: Routledge.
- Dyer-Witheford, Nick. 1999. *Cyber-Marx*. Urbana: University of Illinois Press.
- Dyer-Witheford, Nick. 2005. Cyber-Negri: General intellect and immaterial labor. In *The philosophy of Antonio Negri*, ed. Timothy S. Murphy and Abdul-Karim Mustapha, 136–162. London: Pluto.
- Dyer-Witheford, Nick. 2014. The global worker and the digital front. In *Critique, social media and the information society*, ed. Christian Fuchs and Marisol Sandoval, 165–178. New York: Routledge.
- Dyer-Witheford, Nick and Greig de Peuter. 2009. *Games of empire*. Minneapolis: University of Minnesota Press.
- Ebermann, Thomas, Michael Heinrich, Robert Kurz, and Joseph Vogl. 2011. No way out? Kapital kaputt? Krisengipfel-Gespräch. *Konkret* 12: 12–16.
- Dyson, Esther, George Gilder, George Keyworth, and Alvin Toffler. 1996/2004. Cyberspace and the American dream. In *The information society reader*, ed. Frank Webster, 31–41. Oxon: Routledge.
- Eagleton, Terry. 1991. *Ideology: An introduction*. London: Verso.

- Eagleton, Terry. 2011. *Why Marx was right*. New Haven, CT: Yale University Press.
- Eisenstein, Zillah, ed. 1979. *Capitalist patriarchy and the case for socialist feminism*. New York: Monthly Review Press.
- Engels, Friedrich. 1845. Speeches in Elberfeld. <http://marxists.anu.edu.au/archive/marx/works/1845/02/15.htm> (accessed on July 28, 2015).
- Engels, Friedrich. 1847. Principles of communism. In *MECW*, Volume 6, 341–357. New York: International Publishers.
- Engels, Friedrich. 1878. Anti-Dühring. Herr Eugen Dühring's revolution in science. In *MECW*, Volume 25, 1–311. New York: International Publishers.
- Engels, Friedrich. 1891. A critique of the draft Social-Democratic Programme of 1891. <http://marxists.anu.edu.au/archive/marx/works/1891/06/29.htm> (accessed on July 28, 2015).
- Erlanger, Steven. 2014. Taking on Adam Smith (and Karl Marx). New York Times Online, April 19. <http://www.nytimes.com/2014/04/20/business/international/taking-on-adam-smith-and-karl-marx.html> (accessed on July 28, 2015).
- Federici, Sylvia. 2012. *Revolution at point zero: Housework, reproduction, and feminist struggle*. Oakland, CA: PM Press.
- Feenberg, Andrew. 1995a. *Alternative modernity*. Berkeley: University of California Press.
- Feenberg, Andrew. 1995b. Subversive rationalization: Technology, power, and democracy. In *Technology and the politics of knowledge*, ed. Andrew Feenberg and Alastair Hannay, 3–22. Bloomington: Indiana University Press.
- Feenberg, Andrew. 1999. *Questioning technology*. London: Routledge.
- Feenberg, Andrew. 2002. *Transforming technology: A critical theory revisited*. Oxford: Oxford University Press.
- Feenberg, Andrew. 2010. *Between reason and experience*. Cambridge, MA: The MIT Press.
- Feenberg, Andrew. 2012. Introduction: Toward a critical theory of the Internet. In *(Re)Inventing the Internet*, ed. Andrew Feenberg and Norm Friesen, 3–17. Rotterdam: Sense Publishers.
- Fisher, Eran. 2010. *Media and new capitalism in the digital age: The spirit of networks*. New York: Palgrave Macmillan.
- Fortunati, Leopoldina. 1995. *The arcane of reproduction: Housework, prostitution, labor and capital*. New York: Autonomedia.
- Foucault, Michel. 1977. *Discipline & punish*. New York: Vintage.
- Freeman, Alan. 2010. Trends in value theory since 1881. *World Review of Political Economy* 1 (4): 567–606.
- Freeman, Alan, Andrew Kliman, and Julian Wells, eds. 2004. *The new value controversy and the foundation of economics*. Cheltenham: Edward Elgar.
- Fröbel, Folker, Jürgen Heinrichs, and Otto Kreye. 1981. *The new international division of labour*. Cambridge: Cambridge University Press.
- Fuchs, Christian. 2002. *Krise und Kritik in der Informationsgesellschaft*. Norderstedt: Libri BOD.
- Fuchs, Christian. 2003. The self-organization of matter. *Nature, Society, and Thought* 16 (3): 281–313.
- Fuchs, Christian. 2004. The antagonistic self-organization of modern society. *Studies in Political Economy* 73: 183–209.
- Fuchs, Christian. 2008. *Internet and society: Social theory in the information age*. New York: Routledge.
- Fuchs, Christian. 2009a. Information and communication technologies and society: A contribution to the critique of the political economy of the Internet. *European Journal of Communication* 24 (1): 69–87.
- Fuchs, Christian. 2009b. Some theoretical foundations of critical media studies: Reflections on Karl Marx and the media. *International Journal of Communication* 3: 369–402.
- Fuchs, Christian. 2010a. Alternative media as critical media. *European Journal of Social Theory* 13 (2): 173–192.
- Fuchs, Christian. 2010b. Labor in informational capitalism and on the Internet. *The Information Society* 26 (3): 179–196.
- Fuchs, Christian. 2011. How to define surveillance? *MATRIZES* 5 (1): 109–133.
- Fuchs, Christian. 2012a. Dallas Smythe today—The audience commodity, the digital labour debate, Marxist political economy and critical theory: Prolegomena to a digital labour theory of value. *tripleC: Communication, Capitalism & Critique* 10 (2): 692–740.
- Fuchs, Christian. 2012b. Political economy and surveillance theory. *Critical Sociology* 39 (5): 671–687.
- Fuchs, Christian. 2014a. *Digital labour and Karl Marx*. New York: Routledge.
- Fuchs, Christian. 2014b. *OccupyMedia! The Occupy movement and social media in crisis capitalism*. Winchester: Zero Books.

- Fuchs, Christian. 2014c. *Social media: A critical introduction*. London: Sage.
- Fuchs, Christian. 2014d. Social media and the public sphere. Inaugural lecture. *tripleC: Communication, Capitalism & Critique* 12 (1): 57–101.
- Fuchs, Christian. 2015. *Culture and economy in the age of social media*. New York: Routledge.
- Fuchs, Christian, Kees Boersma, Anders Albrechtslund, and Marisol Sandoval, eds. 2012. *Internet and surveillance: The challenges of web 2.0 and social media*. New York: Routledge.
- Fuchs, Christian and Vincent Mosco, eds. 2012. Marx is back: The importance of Marxist theory and research for critical communication studies today. *tripleC: Communication, Capitalism & Critique* 10 (2): 127–632.
- Fuchs, Christian and Vincent Mosco, eds. 2015a. Marx and the political economy of the media. Leiden: Brill.
- Fuchs, Christian and Vincent Mosco, eds. 2015b. Marx in the age of digital capitalism. Leiden: Brill.
- Fuchs, Christian and Marisol Sandoval, eds. 2014a. *Critique, social media and the information society*. New York: Routledge.
- Fuchs, Christian and Marisol Sandoval. 2014b. Introduction: Critique, social media and the information society in the age of capitalist crisis. In *Critique, social media and the information society*, ed. Christian Fuchs and Marisol Sandoval, 1–47. New York: Routledge.
- Fuchs, Christian and Marisol Sandoval. 2015. The political economy of capitalist and alternative social media. In *The Routledge companion to alternative and community media*, ed. Chris Atton, 165–175. London: Routledge.
- Fuchs-Kittowski, Klaus. 2014. The influence of philosophy on the understanding of computing and information. In *Philosophy, computing and information science*, ed. Ruth Hagengruber and Uwe V. Riss, 45–56. London: Pickering & Chatto.
- Furhoff, Lars. 1973. Some reflections on newspaper concentration. *Scandinavian Economic History Review* 21 (1): 1–27.
- Galbraith, James K. 2014. Kapital for the twenty-first century? Dissent Magazine Online, Spring. <http://www.dissentmagazine.org/article/kapital-for-the-twenty-first-century> (accessed on July 28, 2015).
- Gandy, Oscar. H. 1993. *The panoptic sort: A political economy of personal information*. Boulder, CO: Westview Press.
- Garnham, Nicholas. 1990. *Capitalism and communication*. London: Sage.
- Garnham, Nicholas. 2000. *Emancipation, the media, and modernity*. Oxford: Oxford University Press.
- Garnham, Nicholas. 2004. Class analysis and the information society as mode of production. *Javnost* 11 (3): 93–104.
- Giles, Chris and Ferdinando Giugliano. 2014. Flawed data on rich weaken Piketty's main argument. *Financial Times*, May 24/25: 5.
- Golding, Peter and Graham Murdock, eds. 1997. *The political economy of the media: 2 volumes*. Cheltenham: Edward Elgar.
- Habermas, Jürgen. 2008. *Ach, Europa*. Frankfurt am Main: Suhrkamp.
- Habermas, Jürgen. 2011. *Zur Verfassung Europas. Ein Essay*. Frankfurt am Main: Suhrkamp.
- Haggerty, Kevin. 2006. The new politics of surveillance and visibility. In *Surveillance and visibility*, ed. Kevin Haggerty and Richard Ericson, 3–33. Toronto: University of Toronto Press.
- Hardt, Michael and Antonio Negri. 2000. *Empire*. Cambridge, MA: Harvard University Press.
- Hardt, Michael and Antonio Negri. 2004. *Multitude*. New York: Penguin.
- Hardy, Jonathan. 2014. *Critical political economy of the media: An introduction*. London: Routledge.
- Harvey, David. 2003. *The new imperialism*. Oxford: Oxford University Press.
- Harvey, David. 2005. *A brief history of neoliberalism*. Oxford: Oxford University Press.
- Harvey, David. 2006. *Spaces of global capitalism. Towards a theory of uneven geographical development*. London: Verso.
- Harvey, David. 2010. *A companion to Marx's Capital*. London: Verso.
- Harvey, David. 2014. Afterthoughts on Piketty's Capital. <http://davidharvey.org/2014/05/afterthoughts-pikettrys-capital> (accessed on July 28, 2015).
- Harvie, David. 2005. All labour produces value for capital and we struggle against value. *The Commoner* 10: 132–171.
- Haug, Wolfgang Fritz. 1986. *Critique of commodity aesthetics*. Cambridge: Polity Press.
- Haug, Wolfgang Fritz. 2010. Historical-critical dictionary of Marxism: General intellect. *Historical Materialism* 18 (2): 209–216.
- Haug, Wolfgang Fritz. 2013. *Das „Kapital“ lesen—aber wie? Materialien*. Hamburg: Argument.
- Hegel, Georg Wilhelm Friedrich. 1812/1833. *The science of logic*. Ed. and trans. George di Giovanni. Cambridge: Cambridge University Press.
- Hegel, Georg Wilhelm Friedrich. 1830a. *Encyclopaedia of the philosophical sciences, part 1: The encyclopaedia logic*. Indianapolis, IN: Hackett.

- Hegel, Georg Wilhelm Friedrich. 1830b. *Encyclopaedia of the philosophical sciences, part 3: Philosophy of mind*. <http://www.hegel.net/en/pdf/Hegel-Enc3.pdf> (accessed on July 28, 2015).
- Heinrich, Michael. 2013a. Crisis theory, the law of the tendency of the profit rate to fall, and Marx's studies in the 1870s. *Monthly Review* 64 (11): 15–31.
- Heinrich, Michael. 2013b. Heinrich answers critics. *Monthly Review Online*. <http://monthlyreview.org/commentary/heinrich-answers-critics%20%20/> (accessed on July 28, 2015).
- Heinrich, Michael. 2014. The “fragment on machines”: A Marxian misconception in the *Grundrisse* and its overcoming in *Capital*. In *In Marx's laboratory: Critical interpretations of the Grundrisse*, ed. Ricardo Bellofiore, Guido Starosta, and Peter D. Thomas, 197–212. Chicago: Haymarket Books.
- Herman, Edward and Noam Chomsky. 1994. *Manufacturing consent: The political economy of the mass media*. London: Vintage Books.
- Herodotus. 1920. *In four volumes: Books I and II*. Trans. A. D. Godley. Cambridge, MA: Harvard University Press.
- Hess, Charlotte and Elinor Ostrom. 2007. Introduction: An overview of the knowledge commons. In *Understanding knowledge as a commons: From theory to practice*, ed. Charlotte Hess and Elinor Ostrom, 3–26. Cambridge, MA: The MIT Press.
- Hobsbawm, Eric J. 1952. The machine breakers. *Past and Present* 1 (1): 57–70.
- Hofkirchner, Wolfgang. 2013. *Emergent information: A unified theory of information framework*. Singapore: World Scientific.
- Holman, David, Rosemary Batt and Ursula Holtgrewe. 2007. *The global call centre report: International perspectives on management and employment*. <http://www.ilr.cornell.edu/globalcallcenter/upload/GCC-Intl-Rept-UK-Version.pdf>.
- Holman, David, David Wood, and Chris Stride. 2005. *Human resource management in call centres*. <http://www.ilr.cornell.edu/globalcallcenter/research/upload/UK-CC-report.pdf> (accessed on July 28, 2015).
- House of Commons Committee of Public Accounts. 2013. *Tax avoidance—Google: Ninth report of session 2013–2014*. London: The Stationery Office Limited.
- International Labour Organization (ILO). 2013. *Making progress against child labour: Global estimates and trends 2000–2012*. Geneva: International Labour Office.
- International Labour Organization (ILO). 2014. *Global employment trends 2014*. Geneva: International Labour Office.
- International Trade Union Confederation (ITUC). 2010. *On the job for a better future: A best practice on organising young people*. Brussels: ITUC.
- International Working Men's Association. 1868. *Resolutions of the Congress of Geneva, 1866, and the Congress of Brussels, 1868*. London: Westminster Printing Company.
- Jessop, Bob and Ngai-Ling Sum. 2006. *Beyond the regulation approach*. Cheltenham: Edward Elgar.
- Jhally, Sut. 1987. *The codes of advertising*. New York: Routledge.
- Jhally, Sut and Bill Livant. 1986/2006. Watching as working: The valorization of audience consciousness. In *The spectacle of accumulation. Essays in culture, media, & politics*, ed. Sut Jhally, 24–43. New York: Peter Lang.
- Jin, Dal Yong and Andrew Feenberg. 2015. Commodity and community in social networking: Marx and the monetization of user-generated content. *The Information Society* 31 (1): 52–60.
- Jones, Steven E. 2006. *Against technology: From the Luddites to Neo-Luddism*. New York: Routledge.
- Kant, Immanuel. 1785. *Groundworks of the metaphysics of morals: A German-English edition*. Cambridge: Cambridge University Press.
- Katz, Elihu, Jay G. Blumler, and Michael Gurevitch. 1973. Uses and gratifications research. *Public Opinion Quarterly* 73 (4): 509–523.
- Katz, Elihu, Michael Gurevitch, and Hadassah Haas. 1973. On the use of the mass media for important things. *American Sociological Review* 38 (2): 164–181.
- Katz, Katarina. 1997. Gender, wages and discrimination in the USSR: A study of a Russian industrial town. *Cambridge Journal of Economics* 21 (1): 431–452.
- Kitching, John and David Smallbone. 2012. *UK freelance workforce, 2011*. Kingston upon Thames: Kingston University.
- Kliman, Andrew. 2007. *Reclaiming Marx's "Capital": A refutation of the myth of inconsistency*. Lanham, MD: Lexington Books.
- Kliman, Andrew. 2012. *The failure of capitalist production: Underlying causes of the great recession*. New York: Pluto.
- Kliman, Andrew. 2014. “The 99%” and “the 1%” . . . of what? <http://www.marxisthumanistinitiative.org/economic-crisis/%E2%80%9Cthe-99%E2%80%9D-and-%E2%80%9Cthe-1%E2%80%9D%E2%80%A6-of-what.html> (accessed on July 28, 2015).



- Kliman, Andrew, Alan Freeman, Nick Potts, Alexes Gusey, and Brendan Cooney. 2013. *The unmaking of Marx's Capital: Heinrich's attempt to eliminate Marx's crisis theory*. SSRN Working Papers Series (22 July 2013). [http://mpira.ub.uni-muenchen.de/48535/1/MPRA\\_paper\\_48535.pdf](http://mpira.ub.uni-muenchen.de/48535/1/MPRA_paper_48535.pdf) (accessed on July 28, 2015).
- Knoche, Manfred. 2005. Medienkonzentration als Macht- und Legitimationsproblem für Politik und Wissenschaft. Kritisch-empirische Konzentrationstheorie versus apologetisch-normative Wettbewerbstheorie. In *Internationale partizipatorische Kommunikationspolitik*, ed. Petra Ahrweiler and Barbara Thomaß, 117–140. Münster: LIT.
- Knoche, Manfred. 2013. Medienkonzentration. In *Mediensysteme im internationalen Vergleich*, ed. Barbara Thomaß, 2nd edition, 135–160. Konstanz: UVK.
- Kołakowski, Leszek. 2005. *Main currents of Marxism: The founders, the golden age, the breakdown*. New York: W.W. Norton.
- Kondratieff, Nikolai D. 1925. *The long wave cycle*. New York: Richardson & Snyder.
- Kondratieff, Nikolai D. 1926. Die langen Wellen der Konjunktur. *Archiv für Sozialwissenschaft und Sozialpolitik* 56: 573–609.
- Krugman, Paul. 2014a. Is Piketty all wrong? New York Times Online, May 24. [http://mpira.ub.uni-muenchen.de/48535/1/MPRA\\_paper\\_48535.pdf](http://mpira.ub.uni-muenchen.de/48535/1/MPRA_paper_48535.pdf)
- Krugman, Paul. 2014b. Why we're in a new gilded age. *The New York Review of Books*, May 8, [http://mpira.ub.uni-muenchen.de/48535/1/MPRA\\_paper\\_48535.pdf](http://mpira.ub.uni-muenchen.de/48535/1/MPRA_paper_48535.pdf)
- Lazzarato, Maurizio. 1996. Immaterial labor. In *Radical thought in Italy*, ed. Paolo Virno and Michael Hardt, 132–146. Minneapolis: University of Minnesota Press.
- Lebowitz, Michael A. 1986. Too many blindspots on the media. *Studies in Political Economy* 21: 165–173.
- Lenin, Vladimir Ilyich. 1920. *Preface to the French and German editions of "Imperialism, the highest stage of capitalism"*. <http://www.marxists.org/archive/lenin/works/1916/imp-hsc/pref02.htm#fwV22E081>.
- Linebaugh, Peter. 2012. *Nedd Ludd & Queen Mab: Machine-breaking, romanticism, and the several commons of 1811–12*. Oakland: PM Press.
- Livant, Bill. 1979. The audience commodity: on the “blindspot” debate. *Canadian Journal of Political and Social Theory* 3 (1): 91–106.
- Lukács, Georg. 1986. *Werke. Band 14: Zur Ontologie des gesellschaftlichen Seins. 2. Halbband*. Darmstadt: Luchterhand.
- Luxemburg, Rosa. 1899. Reform or revolution. In *The essential Rosa Luxemburg*, ed. Helen Scot, 41–104. Chicago: Haymarket Books.
- Luxemburg, Rosa. 1913/2003. *The accumulation of capital*. New York: Routledge.
- Lyon, David. 1994. *The electronic eye: The rise of surveillance society*. Minneapolis: University of Minnesota Press.
- Lyon, David. 2007. *Surveillance studies: An overview*. Cambridge: Polity Press.
- Mage, Shane. 2013. Response to Heinrich—in defense of Marx's law. Monthly Review Online. <http://monthlyreview.org/commentary/response-heinrich-defense-marxs-law/> (accessed on July 28, 2015).
- Mandel, Ernest. 1978. *Late capitalism*. London: Verso.
- Marazzi, Christian. 2008. *Capital and language*. Los Angeles: Semiotext(e).
- Marcuse, Herbert. 1936/1988. The concept of essence. In *Negations*, 43–87. London: Free Association Books.
- Marcuse, Herbert. 1941. *Reason and revolution: Hegel and the rise of social theory*. London: Routledge.
- Marcuse, Herbert. 1972. *Counterrevolution and revolt*. Boston: Beacon Press.
- Marx, Karl. 1843a. On the Jewish question. In *Writings of the young Marx on philosophy and society*, ed. Loyd D. Easton and Kurt H. Guddat, 216–248. Indianapolis, IN: Hackett.
- Marx, Karl. 1843b. Toward the critique of Hegel's philosophy of law: Introduction. In *Writings of the young Marx on philosophy and society*, ed. Loyd D. Easton and Kurt H. Guddat, 249–265. Indianapolis, IN: Hackett.
- Marx, Karl. 1844 [English]. *Economic and philosophic manuscripts of 1844 and The Communist Manifesto*. Amherst, NY: Prometheus.
- Marx, Karl. 1844 [German]. Ökonomisch-philosophische Manuskripte. In *MEW*, Band 40, 465–588. Berlin: Dietz.
- Marx, Karl. 1849. *Wage labour and capital*. <https://www.marxists.org/archive/marx/works/1847/wage-labour/ch02.htm> (accessed on July 28, 2015).
- Marx, Karl. 1857. Condition of factory laborers. In *MECW*, Volume 15, 251–255. New York: International Publishers.
- Marx, Karl. 1857/1858 [English]. *Grundrisse: Foundations of the Critique of Political Economy (Rough Draft)*. London: Penguin.
- Marx, Karl. 1857/1858 [German]. *Grundrisse der Kritik der politischen Ökonomie*. MEW, Band 42. Berlin: Dietz.
- Marx, Karl. 1859. A contribution to the critique of political economy. In *MECW*, Volume 29, 257–417. New York: International Publishers.

## 382 References and Further Readings

- Marx, Karl. 1861–1863. *Economic manuscript of 1861–63: MECW*, Volume 30. New York: International Publishers.
- Marx, Karl. 1862/1863. *Theories of surplus value: Parts 1, 2, 3*. London: Lawrence & Wishart.
- Marx, Karl. 1863/1864. *Resultate des unmittelbaren Produktionsprozesses. Sechstes Kapitel des ersten Bandes des „Kapitals“: Entwurf von 1863/1864*. Berlin: Dietz.
- Marx, Karl. 1863–1865. Results of the immediate process of production. In *Capital Volume I*, 941–1084. London: Penguin.
- Marx, Karl. 1865. *Value, price and profit*. <http://www.marxists.org/archive/marx/works/1865/value-price-profit/> (accessed on July 28, 2015).
- Marx, Karl. 1867/1976. *Capital: A critique of political economy*, Volume 1. Trans. by Ben Fowkes. London: Penguin.
- Marx, Karl. 1875. Critique of the Gotha Programme. In *MECW*, Volume 24, 80–99. New York: International Publishers.
- Marx, Karl. 1885. *Capital: A critique of political economy*, Volume 2. London: Penguin.
- Marx, Karl. 1894. *Capital: A critique of political economy*, Volume 3. London: Penguin.
- Marx, Karl. 1964. *Frammento sulle macchine*. Trans. Renato Solmi. *Quaderni Rossi* 4: 289–300.
- Marx, Karl and Friedrich Engels. 1845. *The German ideology*. Amherst, NY: Prometheus.
- Marx, Karl and Friedrich Engels. 1848a. *Demands of the Communist Party in Germany*. <http://marxists.org/archive/marx/works/1848/03/24.htm> (accessed on July 28, 2015).
- Marx, Karl and Friedrich Engels. 1848b. Manifest der Kommunistischen Partei. In *MEW, Band 3*, 459–493. Berlin: Dietz.
- Marx, Karl and Friedrich Engels. 1850. Addresses of the Central Committee to the Communist League. <http://www.marxists.org/archive/marx/works/1847/communist-league/1850-ad1.htm> (accessed on July 28, 2015).
- Marx, Karl and Friedrich Engels. 1956–1990. *Marx Engels Werke (MEW)*. Berlin: Dietz.
- Marx, Karl and Friedrich Engels. 1968. *Selected works in one volume*. London: Lawrence & Wishart.
- Marx, Karl and Friedrich Engels. 1975–2005. *Marx Engels Collected Works (MECW)*. New York: International Publishers.
- Mason, Paul. 2014. Thomas Piketty's *Capital*: Everything you need to know about the surprise bestseller. *The Guardian Online*, April 28. <http://www.theguardian.com/books/2014/apr/28/thomas-piketty-capital-surprise-bestseller> (accessed on July 28, 2015).
- Mathiesen, Thomas. 2013. *Towards a surveillant society: The rise of surveillance systems in Europe*. Sheffield on London: Waterside Press.
- Mattelart, Armand and Seth Siegelaub, eds. 1979. *Communication and class struggle, volume 1: Capitalism, imperialism*. New York: International Mass Media Research Center.
- Mattelart, Armand and Seth Siegelaub, eds. 1983. *Communication and class struggle, volume 2: Liberation, socialism*. New York: International Mass Media Research Center.
- McChesney, Robert W. 2004. *The problem of the media*. New York: Monthly Review Press.
- McGuigan, Lee and Vince Manzerolle, eds. 2014. *The audience commodity in a digital age: Revisiting a critical theory of commercial media*. New York: Peter Lang.
- McKercher, Catherine. 2014. Precarious times, precarious work: A feminist political economy of freelance journalists in Canada and the United States. In *Critique, social media and the information society*, ed. Christian Fuchs and Marisol Sandoval, 219–230. New York: Routledge.
- McLellan, David. 2006. *Karl Marx: A biography*. Basingstoke: Palgrave Macmillan.
- McLuhan, Marshall. 1964/2001. *Understanding media: The extensions of man*. New York: Routledge.
- McQuail, Denis. 2010. *McQuail's Mass Communication Theory*, 6th edition. Los Angeles: Sage.
- Meehan, Eileen. 1984. Ratings and the institutional approach: A third answer to the commodity question. *Critical Studies in Mass Communication* 1 (2): 216–225.
- Merton, Robert K. 1988. The Matthew effect in science, II: Cumulative advantage and the symbolism of intellectual property. *ISIS* 79 (4): 606–623.
- Mies, Maria. 1986. *Patriarchy & accumulation on a world scale: Women in the international division of labour*. London: Zed Books.
- Mies, Maria, Veronika Bennholdt-Thomsen, and Claudia von Werlhof. 1988. *Women: The last colony*. London: Zed Books.
- Miliband, Ralph. 1969. *The state in capitalist society*. New York: Basic Books.
- Mill, John Stuart. 1859. On liberty. In *On liberty and other essays*, ed. John Gray, 5–128. Oxford: Oxford University Press.
- Mill, John Stuart. 1884. *Principles of political economy*. New York: D. Appleton & Company.



- Miller, Toby, Nitin Govil, John McMurria, Richard Maxwell, and Ting Wang. 2004. *Global Hollywood 2*. London: British Film Institute.
- Morini, Cristina and Andrea Fumagalli. 2010. Life put to work: Towards a life theory of value. *Ephemera* 10 (3/4): 234–252.
- Morris, William. 1884. Useful work versus useless toil. In *The collected works of William Morris, volume 23: Signs of changes: Lectures on socialism*, 98–120. Cambridge: Cambridge University Press.
- Morris, William. 1885. How we live and how we might live. In *The collected works of William Morris, volume 23: Signs of changes: Lectures on socialism*, 3–26. Cambridge: Cambridge University Press.
- Morris, William. 1893. Communism. In *The collected works of William Morris, volume 23: Signs of changes: Lectures on socialism*, 264–276. Cambridge: Cambridge University Press.
- Mosco, Vincent. 2009. *The political economy of communication*, 2nd edition. London: Sage.
- Mosco, Vincent and Catherine McKercher. 2009. *The laboring of communication: Will knowledge workers of the world unite?* Lanham, MD: Lexington.
- Moseley, Fred. 2013. Critique of Heinrich: Marx did not abandon the logical structure. Monthly Review Online. <http://monthlyreview.org/commentary/critique-heinrich-marx-abandon-logical-structure/> (accessed on July 28, 2015).
- Mount, Ferdinand. 2014. Piketty's decaff Marxism would be just oppressive and intrusive as the old variety. The Spectator Online, May 24. <http://www.spectator.co.uk/books/9210671/capital-in-the-twenty-first-century-by-thomas-piketty-review/> (accessed on July 28, 2015).
- Murdock, Graham. 1978. Blindspots about Western Marxism: A reply to Dallas Smythe. *Canadian Journal of Political and Social Theory* 2 (2): 109–119.
- Murdock, Graham. 2006. Marx on commodities, contradictions and globalisations: Resources for a critique of marketised culture. *ecompos* 7: 1–23.
- Murdock, Graham. 2011. Political economies as moral economies: Commodities, gifts, and public goods. In *The handbook of political economy of communications*, ed. Janet Wasko, Graham Murdock, and Helena Sousa, 13–40. Malden, MA: Wiley-Blackwell.
- Murdock, Graham. 2014a. Commodities and commons. In *The audience commodity in a digital age: Revisiting a critical theory of commercial media*, ed. Lee McGuigan and Vincent Manzerolle, 229–244. New York: Peter Lang.
- Murdock, Graham. 2014b. Producing consumerism: Commodities, ideologies, practices. In *Critique, social media, and the information society*, ed. Christian Fuchs and Marisol Sandoval, 125–143. New York: Routledge.
- Murdock, Graham and Peter Golding. 1973. For a political economy of mass communications. *Socialist Register* 1973: 205–234.
- Murdock, Graham and Peter Golding. 2005. Culture, communications and political economy. In *Mass media and society*, ed. James Curran and Michael Gurevitch, 60–83. London: Hodder Arnold.
- Musto, Marcello, ed. 2008. *Karl Marx's Grundrisse: Foundations of the critique of political economy 150 years later*. London: Routledge.
- Negri, Antonio. 1971/1988. Crisis of the planner-state: Communism and revolutionary organisation. In *Revolution retrieved: Selected writings on Marx, Keynes, capitalist crisis, & new social subjects 1967–83*, 91–148. London: Red Notes.
- Negri, Antonio. 1982/1988. Archaeology and project: The mass worker and the social worker. In *Revolution retrieved: Selected writings on Marx, Keynes, capitalist crisis, & new social subjects 1967–83*, 199–228. London: Red Notes.
- Negri, Antonio. 1988. *Revolution retrieved*. London: Red Notes.
- Negri, Antonio. 1991. *Marx beyond Marx: Lessons on the Grundrisse*. New York: Autonomedia.
- Negri, Antonio. 2008. *Reflections on Empire*. Cambridge: Polity.
- New York Times. 2014. Was Marx right? New York Times Online, March 30. <http://www.nytimes.com/roomfordebate/2014/03/30/was-marx-right> (accessed on July 28, 2015).
- Noah, Harold J. 1965. The “unproductive” labour of Soviet teachers. *Soviet Studies* 17 (2): 238–244.
- Noam, Eli. 2009. *Media ownership and concentration in America*. Oxford: Oxford University Press.
- Noble, David F. 1995. *Progress without people: New technology, unemployment, and the message of resistance*. Toronto: Between the Lines.
- Ofcom. 2014. *International Communications Market Report 2014*. London: Ofcom.
- Ogura, Toshimaru. 2006. Electronic government and surveillance-oriented society. In *Theorizing surveillance*, ed. David Lyon, 270–295. Portland, OR: Willan.
- Owen, Robert. 1991. *A new view of society and other writings*. London: Penguin.

- Perez, Carolta. 2010. Technological revolutions and techno-economic paradigms. *Cambridge Journal of Economics* 34 (1): 185–202.
- Pethokoukis, James. 2014. The new Marxism. National Review Online, March 24. <http://www.nationalreview.com/article/374009/new-marxism-james-pethokoukis> (accessed on July 28, 2015).
- Piketty, Thomas. 2014. *Capital in the twenty-first century*. Cambridge, MA: Belknap Press.
- Popper, Karl. 1945. *The open society and its enemies*. London: Routledge.
- Postone, Moishe. 1980. Anti-semitism and National Socialism: Notes on the German reaction to “Holocaust”. *New German Critique* 19: 97–115.
- Postone, Moishe. 1993. *Time, labor, and social domination: A reinterpretation of Marx’s critical theory*. Cambridge: Cambridge University Press.
- Postone, Moishe. 2008. Rethinking *Capital* in the light of the *Grundrisse*. In *Karl Marx’s Grundrisse*, ed. Marcello Musto, 120–137. London: Routledge.
- Poulantzas, Nicos. 1980. *State, power, socialism*. London: Verso.
- Poulantzas, Nicos. 2008. *The Poulantzas reader*. London: Verso.
- Rankin, Jennifer. 2014. Thomas Piketty accuses *Financial Times* of dishonest criticism. The Guardian Online, May 26. <http://www.theguardian.com/business/2014/may/26/thomas-piketty-financial-times-dishonest-criticism-economics-book-inequality> (accessed on July 28, 2015).
- Ricardo, David. 1819. *On the principles of political economy and taxation*. Indianapolis, IN: Liberty Fund.
- Richta, Radovan. 1969. *Civilization at the crossroads: Social and human implications of the scientific and technological revolution*. White Plains, NY: International Arts and Sciences Press.
- Rosdolsky, Roman. 1977. *The making of Marx’s “Capital”*. London: Pluto.
- Rossi-Landi, Ferruccio. 1983. *Language as work & trade: A semiotic homology for linguistics & economics*. South Hadley, MA: Bergin & Garvey.
- Roth, Karl Heinz and Marcel van der Linden. 2014. Results and prospects. In *Beyond Marx*, ed. Marcel van der Linden and Karl Heinz Roth, 445–487. Leiden: Brill.
- Rovatti, Pier Aldo. 1973. The critique of fetishism in Marx’s *Grundrisse*. *Telos* 17: 56–69.
- Said, Edward. 1978. *Orientalism: Western conceptions of the Orient*. New Delhi: Penguin.
- Sánchez-Tabernero, Alfonso. 1993. *Media concentration in Europe*. London: John Libbey.
- Sandoval, Marisol. 2013. Foxconned labour as the dark side of the information age: Working conditions at Apple’s contract manufacturers in China. *tripleC: Communication, Capitalism & Critique* 11 (2): 318–347.
- Sandoval, Marisol. 2014. *From corporate to social media: Critical perspectives on corporate social responsibility in media and communication industries*. Abingdon: Routledge.
- Sandoval, Marisol and Christian Fuchs. 2010. Towards a critical theory of alternative media. *Telematics and Informatics* 27 (2): 141–150.
- Sandoval, Marisol and Kristina Areskog Bjurling. 2013. Challenging labor: Working conditions in the electronics industry. In *Lessons for social change in the global economy: Voices from the field*, ed. Shae Garwood, Sky Croeser, and Christalla Yakinthou, 99–124. Lanham, MD: Lexington Books.
- Say, Jean-Baptiste. 1803. *A treatise on political economy: Or the production, distribution and consumption of wealth*. New York: Augustus M. Kelley.
- Schmidt, Kjeld and Liam Bannon. 1992. Taking CSCW seriously: Supporting articulation work. *Computer Supported Cooperative Work (CSCW)* 1 (1): 7–40.
- Scholz, Trebor, ed. 2013. *Digital labor: The Internet as playground and factory*. New York: Routledge.
- Schumpeter, Joseph A. 1939. *Business cycles: A theoretical, historical and statistical analysis of the capitalist process*. New York: McGraw-Hill.
- Schumpeter, Joseph A. 1943. *Capitalism, socialism & democracy*. London: Routledge.
- Sekine, Thomas T. 1998. The dialectic of capital: An Unoist interpretation. *Science & Society* 62 (3): 434–445.
- Shenk, Timothy. 2014. Thomas Piketty and millennial Marxists on the scourge of inequality. The Nation Online, April 14. <http://www.thenation.com/article/179337/thomas-piketty-and-millennial-marxists-scurge-inequality> (accessed on July 28, 2015).
- Shuchman, Daniel. 2014. Thomas Piketty revives Marx for the 21st century. The Wall Street Journal Online, April 21. <http://online.wsj.com/news/articles/SB10001424052702303825604579515452952131592>. (accessed on July 28, 2015).
- Shuster, Sam. 2008. The nature and consequence of Karl Marx’s skin disease. *British Journal of Dermatology* 158 (1): 1–3.
- Smith, Adam. 1776. *An inquiry into the nature and causes of the wealth of nations*. Ware: Wordsworth.
- Smith, Adam. 1790. *The theory of moral sentiments*. London: Penguin.

- Smith, Tony. 1990. *The logic of Marx's Capital. Replies to Hegelian criticisms*. Albany: State University of New York Press.
- Smith, Tony. 2004. Technology and history in capitalism: Marxian and neo-Schumpeterian perspectives. In *The constitution of capital: Essays on Volume 1 of Marx's Capital*, ed. Riccardo Bellofiore and Nicola Taylor, 217–242. Basingstoke: Palgrave Macmillan.
- Smith, Tony. 2014a. Hegel, Marx, and the comprehension of capitalism. In *Marx's Capital and Hegel's Logic*, ed. Fred Moseley and Tony Smith, 17–40. Leiden: Brill.
- Smith, Tony. 2014b. The “general intellect” in the *Grundrisse* and beyond. In *In Marx's laboratory: Critical interpretations of the Grundrisse*, ed. Riccardo Bellofiore, Guido Starosta, and Peter D. Thomas, 213–231. Chicago: Haymarket Books.
- Smythe, Dallas W. 1954. Reality as presented by television. In *Counterclockwise. Perspectives on communication*, ed. Thomas Guback, 61–74. Boulder, CO: Westview Press.
- Smythe, Dallas W. 1977. Communications: Blindspot of Western Marxism. *Canadian Journal of Political and Social Theory* 1 (3): 1–27.
- Smythe, Dallas W. 1978. Rejoinder to Graham Murdock. *Canadian Journal of Political and Social Theory* 2 (2): 120–129.
- Smythe, Dallas W. 1981. The audience commodity and its work. In *Dependency road: Communications, capitalism, consciousness, and Canada*, 22–51. Norwood, NJ: Ablex.
- Smythe, Dallas W. 1994. *Counterclockwise*. Boulder, CO: Westview Press.
- Students & Scholars against Corporate Misbehaviour (SACOM). 2013. *Widespread labour abuses at Disney and Mattel Factories: ICTI doesn't care about labour rights standards*. Hong Kong: SACOM.
- Subcomandante Insurgente Marcos. 2001. *Our word is our weapon*. New York: Seven Stories Press.
- Terranova, Tiziana. 2000. Free labor: Producing culture for the digital economy. *Social Text* 18 (2): 33–58.
- The Economist. 2014. Piketty fever: Bigger than Marx. The Economist Online, May 3. <http://www.economist.com/news/finance-and-economics/21601567-wonky-book-inequality-becomes-blockbuster-bigger-marx> (accessed on July 28, 2015).
- Thompson, Edward P. 1966. *The making of the English working class*. New York: Vintage Books.
- Thompson, Edward P. 1978. The poverty of theory, or An orrery of errors. In *The poverty of theory and other essays*, 1–210. New York: Monthly Review Press.
- Toffler, Alvin. 1980. *The third wave*. New York: Bantam.
- Tomba, Massimiliano and Riccardo Bellofiore. 2014. The “Fragment on machines” and the *Grundrisse*: The workerist reading in question. In *Beyond Marx*, ed. Marcel van der Linden and Karl Heinz Roth, 345–368. Leiden: Brill.
- Tronti, Mario. 1962. Fabrik und Gesellschaft. In *Arbeiter und Kapital*, 16–29. Frankfurt: Verlag Neue Kritik.
- United Nations Development Programme (UNDP). 2013. *China Human Development Report 2013: Sustainable and liveable cities: Toward ecological urbanization*. Beijing: China Translation and Publishing Corporation.
- Vercellone, Carlo. 2007. From formal subsumption to general intellect: Elements for a Marxist reading of the thesis of cognitive capitalism. *Historical Materialism* 15 (1): 13–36.
- Vercellone, Carlo. 2010. The crisis of the law of value and the becoming-rent of profit. In *Crisis in the global economy*, ed. Andrea Fumagalli and Sandro Mezzadra, 85–118. Los Angeles: Semiotext(e).
- Virno, Paolo. 1996a. The ambivalence of disenchantment. In *Radical thought in Italy*, ed. Paolo Virno and Michael Hardt, 13–33. Minneapolis: University of Minnesota Press.
- Virno, Paolo. 1996b. Virtuosity and revolution: The political theory of exodus. In *Radical thought in Italy*, ed. Paolo Virno and Michael Hardt, 189–212. Minneapolis: University of Minnesota Press.
- Virno, Paolo. 2004. *A grammar of the multitude*. New York: Semiotext(e).
- Virno, Paolo. 2007. General intellect. *Historical Materialism* 15 (3): 3–8.
- Wallraff, Günter. 2007. Undercover. *Die Zeit* 22. <http://www.zeit.de/2007/22/Guenter-Wallraff> (accessed on July 28, 2015).
- Wallerstein, Immanuel. 2004. *World-systems analysis: An introduction*. Durham: Duke University Press.
- Wasko, Janet. 2011. The study of the political economy of the media in the twenty-first century. *International Journal of Media & Cultural Politics* 10 (3): 259–271.
- Wasko, Janet. 2014. The study of political economy of the media in the twenty-first century. *International Journal of Media & Cultural Politics* 10 (3): 259–271.
- Wasko, Janet, Graham Murdock, and Helena Sousa, eds. 2011. *The handbook of political economy of communications*. Malden, MA: Wiley-Blackwell.

- Weingart, Brigitte. 1997. *Arbeit—ein Wort mit langer Geschichte*. <http://www.ethikprojekte.ch/texte/arbeit.htm> (accessed on July 6, 2014).
- Weinmann, Martin, Ursula Krause-Schmitt, and Anne Kaiser. 2001. *Das nationalsozialistische Lagersystem*, 4th edition. Frankfurt am Main: Zweitausendeins.
- Wheen, Francis. 1999. *Karl Marx*. London: Fourth Estate.
- Wheen, Francis. 2006. *Marx's Das Kapital: A Biography*. London: Atlantic.
- Williams, Raymond. 1960/1969. Advertising: The magic system. In *Culture and materialism*, 170–195. London: Verso.
- Williams, Raymond. 1974/1990. *Television*. New York: Routledge.
- Williams, Raymond. 1977. *Marxism and literature*. Oxford: Oxford University Press.
- Williams, Raymond. 1979. *Politics and letters. Interviews with New Left Review*. London: Verso.
- Williams, Raymond. 1983. *Keywords*. New York: Oxford University Press.
- Williams, Raymond. 1989. *What I came to say*. London: Hutchinson Radius.
- Zasulich, Vera. 1881. *Letter to Marx*. <http://www.marxists.org/archive/marx/works/1881/zasulich/zasulich.htm> (accessed on July 28, 2015).
- Žižek, Slavoj. 2001. Have Michael Hardt and Antonio Negri rewritten the *Communist Manifesto* for the twenty-first century?" *Rethinking Marxism* 13 (3/4): 190–198.
- Žižek, Slavoj. 2014. *Towards a materialist theory of subjectivity: Talk at the Birkbeck Institute of Humanities*. May 22. <http://simongros.com/audio/recordings/slavoj-zizek/towards-materialist-theory-subjectivity/> (accessed on July 28, 2015).