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Digital inclusion and social exclusion: The political economy of value in a networked world

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ABSTRACT
Current debates around user-generated content and its role in wealth generation can be understood as attempts to apply or develop a theory of exploitation or, more broadly, a theory of value. This article seeks to provide a theory based on the network asymmetries of late capitalism, which tend to unevenly distribute network resources through a logic of "digital inclusion." The mechanisms that enable this asymmetric situation are introduced, and the historical displacements that have given rise to those mechanisms are briefly discussed. The conceptual model that emerges from the analysis reveals the salient features of the contemporary connexionist world that transcend, but do not erase, class boundaries.

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The world economy has undergone significant changes in the last three decades, bringing wealth, prosperity, education, and luxury to a select group, and unemployment, poverty, exclusion, and destitution for a large and expanding population. This asymmetric situation could not have arisen without some form of exploitation, which needs to be articulated in terms of a theory that would explain the relationship between the fortunes of the first group and misfortunes of the second. Current debates around user-generated content (UGC) and its role in wealth generation can be understood as attempts to develop such a theory. This debate continues a thread that started more than a decade ago over the "free labor" that is largely enabled by digital technology and captured by the digital economy within which it is embedded (Terranova 2000). In *The Information Society*, the debate between Fuchs (2010) and Arvidsson and Colleoni (2012) has shaped the discourse on the "left" on this topic. Building, respectively, on the Marxist labor theory of value and Negri's notion of "affective investment," these authors arrive at different conclusions, inviting, in turn, further commentaries on the specific character of the new forms of labor mediated by social networking sites (see Proffitt, Ekbia, and McDowell [2015] and the accompanying Special Forum on Monetization of User-Generated Content—Marx Revisited published in *The Information Society* for a compendium of such commentaries). Although almost exclusively focused on UGC, the debate has far-reaching implications in terms of our understanding of the political economy of current capitalism. I therefore propose an expansion of the terms of the debate beyond UGC to incorporate issues of labor and value more broadly.

To that end, I explore an alternative theoretical possibility that builds on the pragmatist sociology of Boltanski and Thevenot (2006) and Boltanski and Chiapello (2005). I argue for a network theory of value, according to which exploitation in the current economy transcends class boundaries, enabled as it is by the logic of "digital inclusion" that drives the network asymmetries of late capitalism. This logic delicately juxtaposes digital inclusion with class exclusion, adding an extra layer of mediation (and mystery) to earlier modes of capitalist exploitation. Before outlining this perspective, a brief summary of the terms and premises of the current debate is in order.

Value and labor

Fuchs's articulation of Marxist theory starts with an argument for the continuing relevance of the notion of "class" in contemporary societies. It then goes on to highlight a specific thread in Marx's writing that defines class on the basis of the process of appropriation of surplus value—that is, the value produced by labor in the

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process of production above and beyond the value it needs to create for its own sustenance in the form of wage. Fuchs's theory of exploitation is, therefore, closely associated with the Marxist theory of labor and surplus value.[1] The mechanism of surplus value creation, which revealed what Marx aptly characterized as the "mystery" of the reproduction of capital, is the distinctive feature of the Marxist theory of capitalist exploitation that sets it apart from other class theories such as Max Weber's (Wright 2005). Weber focused his class analysis on the mechanisms of market exchange and how they give rise to unequal "life chances," whereas Marx identified a second (and more important) mechanism—surplus value creation—in the process of production to account for the accumulation of capital through the exploitation of labor.[2] Marx's theory of value is also distinct from those of economists such as Ricardo who associated the exchange value of commodities with the amount of concrete (individual) labor time that they embody. Unlike these theories, Marx considered the abstract notion of socially necessary labor time as the appropriate measure of exchange value.[3]

Therein lie the power and beauty of Marx's analysis that should not be lost on those who seek to provide a theory of exploitation in late capitalism. One of the key questions that arise from these observations is whether surplus value still provides the basis of exploitation in the current environment. If so, what is the nature of the value thus created, of which this is a surplus? And what is the nature of "abstract labor" that generates such value?

Fuchs's (2012) argument is that the creation of value has shifted from paid labor to unpaid (free) labor. In particular, with respect to user-generated content, he argues that:

> Users employ social media because they strive to a certain degree for achieving what Bourdieu … terms social capital (the accumulation of social relations), cultural capital (the accumulation of qualification, education, knowledge) and symbolic capital (the accumulation of reputation). The time that users spend on commercial social media platforms for generating social, cultural and symbolic capital is in the process of prosumer commodification transformed into economic capital. Labour time on commercial social media is the conversion of Bourdieuian social, cultural and symbolic capital into Marxian value and economic capital. (Fuchs 2012, 638)

Two key questions for Fuchs's position are whether or not this conversion amounts to exploitation, and, if it does, whether exploitation is class based. The answer to the first question would be positive if the three criteria proposed by Wright (2005), and adopted by Fuchs, are met:

1. Inverse interdependent welfare principle: The material welfare of exploiters causally depends on the material deprivations of the exploited.
2. Exclusion: The exploited are excluded from access to certain productive resources.
3. Appropriation: Exclusion enables exploiters to appropriate the labor effort of the exploited.

Fuchs contends, despite Wright,[4] that all these criteria are met, and hence exploitation takes place on social media. As for the second question about the class basis of exploitation, he also argues that all the contributors belong to what he dubs the "exploited class." Finding the traditional (industrial) notion of "working class" inadequate for the contemporary situation, though, Fuchs (2012, 187) expands it to include direct knowledge workers (people in health, education, and other service industries), indirect knowledge workers (e.g., houseworkers, largely female, who "produce knowledge in the broad sense of communication, affects, sexuality, domestic goods and services"), and the "underclass" (the unemployed and underemployed, migrants, retirees, etc.), as well as the self-employed. In affinity with Hardt and Negri (2000)'s notion of the "multitude," he includes all these groups under the umbrella of the exploited classes.

Based on the preceding premises, Fuchs moves on to a discussion of user exploitation by new media companies such as Facebook, which "sell users as a commodity" in the fashion that audiences are sold to advertisers on traditional media (Smythe 1981). In particular, he argues that anyone who produces content in the new media is a member of the exploited class. His key criterion in differentiating the multitude from the capitalist class, broadly articulated in the conclusion section of his paper, is that the multitude lacks the control of the commons of society (common pool knowledge, infrastructure, natural resources, etc.), as well as an actual experience of affluence. With regard to mechanisms of exploitation, Fuchs applies Marx's notion of extra surplus value to argue that what happens on social media is overexploitation. Extra surplus value, according to Marx, is created when the individual value of commodities is below their social value—that is, when they are produced at a lower cost than the social average.[5] By employing illegal immigrants, students, and other casual workers, Fuchs contends, variable capital (wage) is lowered, but the commodity is sold at the market price, creating extra surplus value in the process. This, according to Fuchs, is even more dramatic

in the case of social media companies that draw on unpaid labor.

Value and affect

Arvidsson and Colleoni (2012) challenge Fuchs's attempt to apply the Marxian labor theory of value by going back to the origins of labor theory and its emphasis on (abstract) labor time as the key source of value in industrial capitalism. As Arvidsson and Colleoni point out, this theory has both a political and an economic dimension. Politically, it is premised on some form of "compulsion" that submits individuals to certain types of labor that ultimately lead to their exploitation; economically, it asserts that such exploitation is based on the labor time dedicated to productive work, which, as mentioned earlier, gives rise to surplus value appropriated by capital. Arvidsson and Colleoni remain largely silent on the political aspect, and refute the economic argument in its application to user-generated content. They question the idea of applicability of labor time as the source of value in "informational capitalism"—largely on the basis of the absurdity of infinite exploitation[6] —but they do not go into a deep analysis of how the nature of compulsion has changed in the last century and a half since Marx developed his theory of the political economy of capitalism. What they offer in place of the theory is a variation of Negri's concept of value-affect.

Negri's perspective on the question of value can be roughly understood in terms of two inversions. One inversion has to do with the separation of use value and exchange value, which was a central tenet of Marxian theory.[7] This separation, according to Negri, does not apply anymore under the circumstances when use value is reduced to "a constrictive and totalitarian regime of exchange value" (Negri 1999). In other words, in an environment where marketing tools and techniques are key determinants of price, the distinction between use and exchange values is not analytically useful. The other inversion, related to the first one but still distinct from it, has to do with the relationship between labor and affect, which Negri, following Spinoza, defines as "the power to act." The erasure of affect and subjectivity from the measurement of value, which is the linchpin of political economy, has generated an apparent paradox that Negri seeks to undo. The paradox derives from the fact that affect, as something that is not measureable, is at the same time at the center of value creation. To resolve the paradox, therefore, one needs to put affect back at the center of one's theory, where it belongs—hence, the notion of value-affect.

Negri's two inversions provide the basis for Autonomist views of current capitalism, which "takes the mind, language, and creativity as its primary tools for the production of value" (Berardi 2009, 21). These inversions also provide support to Arvidsson and Colleoni's arguments against a theory of value based on labor time. With labor becoming more complex (relying on affects, motivation, reputation, etc.) and value becoming more abstract and financialized (increasingly produced in complex networks involving firms and consumers but also financial analysts, brands, etc.), Arvidsson and Colleoni argue that the economy has shifted toward an affective law of value, "where the values of companies and their intangible assets are set not in relation to an objective measurement, like labor time, but in relation to their ability to attract and aggregate various kinds of affective investments, like intersubjective judgments of their overall value or utility in terms of mediated forms of reputation" (Arvidsson and Colleoni 2012, 142). Based on these themes, Autonomists advocate an alternative meaning of value and wealth "as the simple capacity to enjoy the world available in terms of time, concentration and freedom" (Berardi 2009, 81), and find in digital technologies effective tools for the creation of this kind of wealth. They see an opportunity for cooptation and liberation from within the capitalist system itself.

The debate recapped

In brief, while the debate between Fuchs and Arvidsson and Colleoni takes off with the question of the relevance of the Marxian theory of labor value in contemporary economy, their conclusions greatly diverge on the issue of whether activities in digital environments amount to a form of exploitation. Despite the divergent conclusions, however, the two views are based on a shared sociological understanding that explains people's behaviors in terms of membership in stable social groups (class, multitude, etc.), with one emphasizing the "objective" implications of that membership and the other highlighting the "subjective." This creates problems for both accounts, with Fuchs's notion of class becoming too diffuse to maintain much analytic purchase (almost everyone is a member of the multitude), and with Arvidsson and Colleoni failing to provide an account of the social and material mechanisms of value creation, especially in relation to the mechanisms of coercion and control that pervade the contemporary digital economy.[8]

I seek to develop an alternative understanding of value in the current economy that goes beyond stable group membership, and that would account for the kind of

exploitation that manifestly takes place in the economy in general and in the participatory labor of online activity in particular. The premises of my argument vis-à-vis the current debate are as follows:

1. Current capitalism, like all earlier forms of capitalism, is a class-based society. *Class structures* are relatively stable, defined as before by polarized relationships to means of production (e.g., capitalists and laborers). *Class formations*, on the other hand, are more dynamic, and depend on the ways collectivities organize themselves on the basis of their interests at any given historical moment (Wright 1997). The formations change according to the specific stage or "spirit" of capitalism as well as the balance of social and political power in a given society. Class formation in American capitalism of the early 19th century largely consisted of family-owned enterprises and their employees; it shifted to large corporations controlled by non-owner managers in the second half of the century and later to monopolistic cartels of the early 20th century. Class formations in contemporary capitalism have acquired a hyperdynamic and fluid character, largely embodied in computer-mediated network relationships with a global span. Networks embody the class formations of contemporary capitalism. A key consequence of these displacements is that current capitalism is "inclusionary" rather than exclusionary—that is, it secures value by bringing and keeping large segments of the population into its fold in the form of unwaged, unpaid, or minimally compensated labor (Ekbia and Nardi, in press). While, as Marx repeatedly pointed out, earlier eras of capitalism also benefited from the reserve army of labor available on the market, in the connexionist world, where hooking up to networks can be attained at very low cost, exclusion would eliminate new means of value extraction. Instead, digital inclusion—in the sense of being connected to a network, not being a member of the privileged class—has become the modus operandi of current capitalism. Capitalism has reinvented itself once again, exploiting the masses through digital inclusion. Wright's second criterion for class-based exploitation ("exclusion"), therefore, does not apply to these forms of value extraction.
2. Labor has been, and remains to be, the sole source of value creation in capitalist economies. Although the general principle has stayed constant—"to secure and obscure the extraction of surplus value" (Burawoy 1978, 254)—the techniques and mechanisms of extraction of value have changed throughout the eras. The historical trend in capitalism has been the employment of more indirect and diffuse forms of control that enable subtle forms of obscuring while expanding the circle of those whose labor is secured. A theory of labor in current capitalism should be able to reveal these mechanisms despite their subtlety.
3. The juxtaposition of (1) and (2) creates a set of conceptual dilemmas and challenges for the observer and analyst of the political economy of current capitalism, particularly in regard to a theory of value creation and capital reproduction. The dichotomous options of either exploitation-based or affect-based extraction of value tend to obfuscate rather than illuminate the mechanisms of value extraction. An alternative should be sought that takes into account the changing scenery outlined in (2) while remaining committed to the class-based perspective expressed in (1).

On the basis of the preceding, I propose an account of value and labor in the current economy that differentiates between "exploitation" and other forms of value extraction in current capitalism. In what follows, I reserve the term "exploitation" for the extraction of surplus value from waged labor, and apply a different set of concepts to explain other forms of value extraction in the connexionist world.

A network theory of value

To provide such an account, I draw on the conceptual framework introduced by Boltanski and Thévenot (1991/2006), and further developed by Boltanski and Chiapello (1999/2005), which seeks to understand human action in terms of different forms of justification and evaluation.[9] As with some other approaches (e.g., Graeber 2005), a key premise of this framework is that rather than just economic value, other types of social "values" drive human action. In their framework, these values are based on principles that operate within various orders of worth, and to which individuals resort to depending on the particular "world" (or polity) that they inhabit in any given situation. In the original formulation, Boltanski and Thévenot identified six such worlds—namely, the inspired, domestic, fame, civic, market, and industrial worlds—with their concomitant principles, objects, relations of worth, tests, evidence, and so on. Briefly, the inspired world is the world of vision, passions, and imagination, where people's worth is determined by their degree of spontaneity, originality, and creativeness. The domestic world is the world of traditions, customs, and conventions, where people's worth depends on their upbringing, manners, and character (honesty, trustworthiness, wisdom, etc.) as confirmed by

those who have a higher position within a hierarchy of relationships: the elderly, the leader, the wise. In the world of fame—the world of attention, persuasion, and presentation—worth is based on the opinion that others have of us. It is a world of identification, where "the most worthy include the others because the latter *identify* with the former," in the fashion that a fan identifies with a "star" (Boltanski and Théveot 1991/2006, 181, italics in original). The civic world is distinct in that it attaches importance to collectives instead of individuals. As such, it values solidarity, group membership, and collective interest, which often take a legal form in delegation and representation. The market world, not to be confused with a sphere of economic relations, is the world of desire and competition over the possession of valuable, salable, or rare goods. Finally, the *industrial* world is the world of science and technology, where efficiency, performance, and productivity constitute key measures of worth. In this world, people are evaluated on the basis of their reliability, predictability, and professionalism.

This original formulation is more recently brought up to date and historicized by Boltanski and Chiapello (2005), who have studied the displacements of capitalism in the last century or so.[10] A principal component of these displacements, according to these authors, is the emergence of a new world that they refer to as the "connexionist world" and the associated "projective polity"—essentially an environment with a network logic where "the *project* is the occasion and reason for the connection," and where mediation in creating networks is a value in itself (104–107, italics in original).[11] In this world, people are valued to the extent that they can flexibly move around, forge new links, and remain distrustful of (and, hence, disloyal to) preestablished organizational formats and conventions. This is a world where forging relationships can be a source of profit, and where people's value derives from their degree of "mobility"—that feature of the connexionist world most relevant to the mechanisms of value extraction that are particular to this world. What are these mechanisms?

Mobility: Effective and mundane

To answer this question, we need to consider two key conditions that have to be in place for exploitation to take place: (i) Both the exploiter and the exploited should be part of the same world—namely, a network to which they are both connected; and (ii) the nature of their relationships in this network should be more than structural (i.e., their being part of the same network structure)—it should be substantial as well (Boltanski and Chiapello 2005). It is not adequate, for instance, to show that members of Facebook are its source of wealth just by virtue of their membership. One should also show how the members contribute to wealth creation for Facebook. One needs, in other words, to provide a joint explanatory mechanism of network connection and value extraction. The first condition proposed by Boltanski and Chiapello is easily manifest, because the connexionist world brings a diverse set of actors—online retail stores, manufacturers of networking technologies, software development houses, Internet service providers (ISPs), and social networking sites—along with "end users" into contact with each other as nodes of the same network. The second condition, however, is not as obvious, facing us with a mystery similar to what Marx unraveled in his time. This derives from the fact that the mechanisms that enable the contribution of the end user to wealth creation are not readily discernible. The contribution, as Boltanski and Chiapello (2005) argue, "must at once possess limited visibility, not to be acknowledged in the framework of this world, and have meager value (otherwise the injustice done to them would be obvious), while contributing to its enrichment" (361).

The mechanism that enables this kind of invisible and unnoticeable contribution is, indeed, at the core of the connexionist polity; it has to do with the different degrees of mobility available to various players. The winners of this world are the flexibly and effectively mobile—those who are able to move not only geographically (between places, projects, and political boundaries), but also socially (between people, communities, and organizations), and mentally (between ideas, skills, and habits). These fall into two groups. Either they are "network-extenders" who reach out, cultivate new links, and make new contacts, strengthening in the process the networks of which they are a part, or they are opportunistic "networkers" who utilize the resources of the connexionist world to their own advantage—those who position themselves as "obligatory passage points" through which other network participants should pass.[12] Both of these groups need a third group of network-condensers who have to mill around in order for the links created by the former to remain active, productive, and useful. Condensers, as members of these networks, are either minimally mobile or involved in a kind of mobility that is ineffective in leveraging their personal advantage. They constitute the group that satisfies two of the conditions put forward by Wright (2005)—namely, inverse independence and appropriation of labor—but not that of exclusion.

First, as noted earlier, a relation of inverse independence holds between condensers, on the one hand, and network-extenders and networkers, on the other. Economically, statistical data illustrate a sustained trend of

dropping income and rising poverty (in absolute, not relative terms) for an increasing portion of the population in the United States in the last three decades (Acemoglu and Autor 2010). Put together with the fact that a large number of the *nouveau riche* during the same period are the founders of Internet, communications, and social media companies, this shows a correlation that cannot be coincidental (Forbes 2013). In fact, in the current economy, computer technologies serve as vehicles and enablers of a relation of "inverse instrumentality," where systems that are supposed to provide service to human beings practically put them to instrumental use (Ekbia and Nardi 2013). This aspect of current technologies is a strong differentiator from technologies of "automation," which is often neglected in accounts of modern computing platforms. Unlike automation systems that tend to transfer both manual and cognitive labor from humans to machines, current systems such as social media need users in order to be of any use (Ekbia and Nardi 2014). A good user, to quip with the infamous folk expression, is not a dead user; it is an active and engaged user, built in the image of the idealized consuming individual of new capitalism (Sennett 2007).

Second, the labor and efforts of condensers are appropriated by extenders and networkers, not on the basis of a class relationship, but through their limited access to network's social, material, and informational resources. Networks and classes are not mutually exclusive, but the nature of appropriation in networks is broader than classes. Condensation, as the generic mechanism of value extraction in the connexionist world, consists of those activities that are needed to keep the otherwise sparse connections of networks live, populated, operational, and productive. Condensers are not members of the same class; the degree of heterogeneity in their relationship to means of production makes it unwarranted to include them all in a single Marxian class. A gamer, for instance, who plays on a home-based game console does not have the same kind of relation to computing resources as someone using a public library computer to check his or her Facebook profile, or a student doing a Google search on a university lab machine, and all of them are in a rather different relationship to capital from a corporate employee. Lumping all of these groups, and many others as Fuchs does, under a common "class" does not seem to provide much analytic or practical benefit.

Third, condensers are part of the connextionist world and, therefore, "included" in the sense of being connected, although they are not included as members of privileged class. To understand this, we need to think in terms of networks (in the plural) rather than network (in the singular). The power and privilege of extenders and networkers is largely in the fact that they can move across various networks, creating connections among them—a privilege that condensers are deprived of because they are tied to particular networks.

Systems such as video games, social media, and online search engines instantiate this state of affairs in various manners, with built-in functions that enable condensation in direct and indirect ways. Social media are essentially empty containers—what is Facebook without its membership?—that pull in and appropriate user content in a piecemeal process that renders the contribution unrecognizable. Companies such as Google that run on a different business model of targeted advertisement also exploit user activities for part of their operations. In addition to advertisement income and the "search cost" involved in the acquisition of information and taken up in searching, users contribute to the creation of wealth in other manners as well. The Completely Automated Public Turing Test(s) to Tell Computers and Humans Apart, or CAPTCHA, for instance, has allowed Google to deal with the problem of nonstandard fonts and formats. This mechanism was originally developed to distinguish between humans and bots (intelligent software agents), with the intention of preventing the latter to pose as human users. Now, through an innovative inversion, the same mechanism is put to use to reap benefit from user activity. To gain entry into a system as real humans, users have to correctly recognize distorted strings of alphanumeric characters and reenter them on the screen—a process that involves some cognitive and manual labor on the part of the user, slowing the user down as well. Google also embarked on a project called reCAPTCHA where this labor is used to parse a scanned image of a word from a book (for Google Books's digitization initiative) or a photographed image of a street name or traffic sign (coming from the Street View imagery used on Google Maps) (Gizmodo 2013). While computer professionals understand this as "exploiting the difficulty of solving hard AI [artificial intelligence] problems to foil computing agents" (Wing 2006), one can also consider it as exploiting human agents to solve seemingly mundane but practically challenging computing problems.

A more direct form of value extraction is implemented by LinkedIn—a site driven by the endemic issue of unemployment in modern societies and the continuous need of professionals to "market" themselves. Financially supported by recruiters and actively sponsored by the U.S. government (e.g., through training workshops), LinkedIn provides a rather explicit model of a digitally enabled labor market.

In brief, value extraction in digitally mediated environments that operate outside work relationships takes

place because the limited and mundane mobility of the majority is necessary for the fortunes of the few. The latter can move on, out, and above exactly because the former are kept fixed in situ, in status, and sometimes in skills, often serving as "stand-ins" for the winners.[13] The same army that provides flexibly available labor to capital also provides the army of networkers, gamers, and users who keep the powerful computer engines of technology companies running. For Google to build a business model on the efforts of users through its patented CAPTCHA program, people have to spend time and effort without gaining any specific skill. For Facebook to make colossal profit, millions of people need to stay put, anchored to their chairs for hours in a stretch, in order to keep the links enabled by Facebook active and alive. For video games to turn into a billion-dollar industry, hundreds of thousands of dedicated game players should invest their time, effort, and skills to populate the gaming environment. For business executives, financial gurus, and project leads to be able to move their teams, financial packages, and projects around the globe freely, thousands of office workers, service providers, and low-paid employees need to converge in large metropolitan centers of the financial world (Sassen 2005). In brief, in this environment value extraction takes place not only on the basis of exclusion from a class but also through inclusion in the network.

Control and complicity

The socioeconomic mechanisms described in the preceding have an attendant political dimension as well. The capitalist mode of exploitation is distinct from earlier modes in its absence of direct physical coercion in the extraction of value—a feature that has been multiply mystified through the social mediations of computing technologies. Despite their different techniques, what is common among all of these scenarios of value extraction is their indirect and invisible character, but also the outwardly voluntary nature of activities of those involved, turning contributors into complicit actors in the process. The complicity of actions makes it difficult to see the delicate mechanisms of coercion and control that enable them. This is where the political and economic dimensions of value extraction come into play at once, as they did in Marx's theory. To remove the mystery, therefore, it would be useful to examine the historical development of social control in modernity.

Michel Foucault (1995), famously, dissected these mechanisms in his studies of disciplinary societies that substituted the physical punishment of coercive societies of premodern times with spatial distributions, anatomo-chronological control of activity through timetables, gestures, and technically defined articulations, and a technopolitical machinery that inserted the body in organized ensembles in order to accomplish efficiency, arranging a positive economy in the process. This historical transition took most of the 18th and 19th centuries as well as the first part of the 20th century almost until World War II. The postwar crisis, accompanied by the immanent control crisis of the times (Beniger 1986), led to the transition of disciplinary societies to what some have called control societies (Deleuze 1992/2008).

With the changing spirit of capitalism in the second half of the 20th century (Boltanski and Chiapello 2005), the nature of control has evolved noticeably and more than once. Early on, bureaucratization provided the key mechanism of control in these societies, but because of the unfavorable and rebellious response that it generated in Europe and the United States (most dramatically expressed in the 1968 riots in Paris, San Francisco, and elsewhere), it had to give way to more delicate mechanisms of self-control and team control, where individuals themselves as "autonomous workers," their colleagues, and putative others (under the rubric of "customer service") acted as surrogate control mechanisms. This led, further down the road in the 1980s, to an intense casualization of work, where a large army of part-time, temporary, and unemployed workers provided a standing reserve of available labor to capitalism, organized in internal markets and outsourced project teams. The outcome of these developments is "the winner-take-all society," where "the big prizes come only to the winning team, and there are few or no consolation prizes" (Sennett 2007, 52; cf. Frank 1995).

With this in the backdrop, and with the infiltration of computer technologies into all aspects of daily life, control mechanisms have been further refined and expanded to envelope larger segments of the society, and not only in their work environments but also, and perhaps more significantly, outside their jobs at home and at leisure. Being sociotechnically imbricated in innovative fashion, these mechanisms bring together in a seamless manner data analytics, computer surveillance, and collective evaluation and microvalidation techniques of social media (e.g., "Like" on Facebook, "Follow" on Twitter, etc.), directing an extended but invisible Foucaultian gaze on people's public and personal life. From this perspective, current mechanisms of control are somewhat continuous with those of prior capitalist eras, dealing as they do with the inherent dilemma and ambivalence of modernity (Wagner 1999).

As such, these control mechanisms are not different in terms of their social function from the earlier regimes of control. "There is no need," as Deleuze (1995/2008) suggested, "to ask which is the toughest regime, for it's

within each of them that liberating and enslaving forces confront one another" (7).[14] What we do need to ask is how these changes were brought about and implemented in rather quick historical succession in the course of almost one century. What are the drivers and dynamics of socioeconomic change in capitalism that enabled these transformations? A full satisfactory answer to this question is beyond the scope of this essay (for an extended analysis see Ekbia and Nardi, in press). However, one cannot fail to notice that, unlike early capitalism that alienated the person from his or her labor à la Karl Marx (1867/1990), and unlike middle capitalism whose ideal worker was "of a mentally sluggish type" à la Fredrick Taylor (1911), new capitalism wants people to participate in the capitalist process as totalized entities, fully and continuously engaged. The archetype of the ideal subject now is the teenage gamer, the obsessed social media member, and the permanently reskilled, reeducated, and mobile professional. This ideal subject has a more visible presence in the "developed" economies of the North, but the push for its adoption is noticeable in other parts of the globe as well (Sennett 2007). To be part of this environment takes investment in time and in affect but also in skills, relationships, and commitments. There is, of course, return on these investments in terms of connections, creativity, and participation, but in the big picture the economic balance seems to heavily favor a small group at the expense of all the rest. In this light, the logic of the network should be inverted from the perspective of the networker—You get from the network what you put into it—to the perspective of the condenser: The network gets from you much more than you get from the network.[15] By this same logic, what is considered "affective investment" should be more accurately called "affective engagement"—a kind of reward that trades in economic value for emotional satisfaction and "consuming passion" (Sennett 2007, 155).

Further thoughts

The economically polarized circumstances of the last three decades, marked by the concomitant creation of an enormous amount of wealth and a deepened poverty for the majority, is in need of an explanation. A theory that provides such an explanation should be both relevant and valid—that is, it should be capable of highlighting "the most salient features of contemporary social hierarchy, division, and conflict," and it should receive empirical confirmation of its key tenets (Pakulski 2005, 152).

The analysis presented here, with its emphasis on the network environment that embodies class formations of current capitalism, speaks directly to the relevant aspects of contemporary societies. The network form looms large in current theories of innovation, management, and society as a transparent, flexible, and symmetric form of organizing, often with a fervor that tends to overlook its potential for secrecy, asymmetry, and collusion (Ekbia and Kling 2005; Kallinikos 2006). The mechanism described in the preceding reveals another aspect of the network world in terms of its capacity for polarization, its urge for anchoring a large contingent of condensers, and its insatiable hunger for extraction of value. As Fuchs points out, the novelty of contemporary societies is not that there are networks in operation in society, as networks have been around throughout almost all of human written history. Rather what is novel is that the processes of production, distribution, and exploitation take place in network structures and organizations mediated by pervasive computerized information and communication technologies, which have taken the network form to a whole new scale. If we take seriously the metaphor of capital as flow (Harvey 2010), a key question for a theory of value is to identify the channels through which capital flows in order to maintain its growth. In the current economy, an important part of this structure is the interstices and crevices that offer opportunities for profitable bridge building, thereby opening up new channels that digital networks provide for the incessant flow of capital. These networks have, indeed, created a refuge for that large segment of the population that is driven out of the fat bureaucratic hierarchies of the last century.

In terms of validity, the exemplary cases of gaming, social media, and LinkedIn provide some evidence of the kinds of mechanisms that enable the appropriation of "free labor" (Terranova 2000) in salient embodiments of the network world. Admittedly, these cases fall short of providing solid empirical confirmation for the theory presented here; this would require extended empirical studies that need to be conducted in the future—a possibility that the current analysis seeks to create through its model. At the same time, other alternatives on the table, to the extent that they are relevant, can also benefit from a similar empirical verification. I have already discussed the gaps in Fuchs's and Arvidsson and Colleoni's accounts on both dimensions. Another theoretical alternative would consist of formulating the monetization of user-generated content in terms of the extraction of rent—that is, in terms of returns on assets that are fixed in supply (Sørensen 2005). One could argue, for instance, that the vast infrastructures required for the implementation and operation of computerized networks are such assets, and that they create a formidable entry cost and hence a "monopoly rent" (Sørensen 2005, 138) that is extracted by the owners and operators of these networks.[16] While meaningful at first glance, this

formulation discounts the contribution of "condensers" in the sustained operation of these networks.

Lastly, the difference between current technologies and automated systems cannot be overemphasized. By focusing on the latter, particularly in terms of the impact on jobs and employment, many observers (e.g., Brynjolfsson and McAfee 2011) lose sight of the fact that technologies developed by Facebook, Google, and the like are not automation systems. This neglect leads to the more significant issue of the extraction of value, on which the current debate has thankfully shed some light.

Notes

1. It is important to note that Fuchs's theory is one among other possible explanations originating in Marxism. Wright (2005, 15–20), for instance, provides an outline of a neo-Marxist class analysis, which is different in its approach and conclusions. In particular, highlighting "the explanatory inadequacy of the two-location model" (i.e., a "two-class model" such as the one developed by Fuchs), he outlines the kinds of complexities that need to be considered in an articulation of class analysis.
2. The Weberian model, as such, is nested in the Marxist one. As Wright (2005, 27) muses, "Inside every leftist neo-Weberian is a Marxist struggling to stay hidden."
3. Marx was the first person to differentiate between concrete and abstract labor, and their relation to, respectively, use and exchange value. Unlike concrete labor, which is spent in the creation of specific tangible products, abstract labor is the source of economic value within particular social relations (e.g., capitalism). This distinction, which Marx described as, "the pivot on which a clear comprehension of political economy turns" (1867, Vol. 1, Section 2), forms the basis of the Marx's theory of surplus value (see note 7 in the following).
4. Wright limits his concept of economic class to wage labor and capital. Therefore, for him, many of the groups included by Fuchs in the multitude are not exploited, but excluded and hence economically oppressed by capital (Wright 1997, 26–28). A key difference between economic oppression and exploitation, according to Wright, is the dependency of exploiters on the exploited. European settlers in North America, for instance, oppressed but did not exploit the natives—hence, the repugnant folk expression of the 19th century: "the only good Indian is a dead Indian." The only good worker of industrial capitalism, by contrast, is not a dead one but an obedient one. This distinction is going to matter to the analysis presented here as well, although the dependency discussed here has a networked character, as opposed to class dependency. A good citizen of the connexionist world, as we show in the following, is not an obedient individual but a connected, engaged, and "autonomous" one.
5. In Marx's theory, extra surplus value changes the distribution of value (profits) between capitalist enterprises with different rates of "productivity," resulting in the transfer of value from those capitalists that produce at the social average to those who produce below it. As such, extra surplus value does not imply a reduction in the value of labor power—a point that undermines Fuchs's argument (Marx 1867/1990: Capital, Vol. 1, Ch. 12).
6. The notion of infinite exploitation derives from the fact that Fuchs, following Marx, takes labor time as the measure of profit and hence exploitation: $p = s/(c + v)$, where p, s, c, and v stand, respectively, for rate of profit, surplus value, constant capital, and variable capital. In the extreme case, where no constant capital (e.g., machinery) is involved, $p = s/v$. Since labor also is free, variable capital (wage) is zero, the denominator vanishes, and the rate of profit becomes infinite.
7. The distinction between exchange-value and use-value has a long intellectual history, with the former referring to the value of a commodity when it is exchanged with other commodities on the market, and the latter referring to its value when used by human beings. In Marxian theory, this distinction was made very prominent, and embedded in a four-way conceptual construct that also includes abstract labor *value* and *price*. Marx built on this distinction to draw attention to the social aspects of commodity exchange such as the power of the owner to command labor, and also in his theory of commodity fetishism where he shows how in capitalism social relationships among human beings are obscured by economic relationships between commodities (Marx 1990, 165).
8. Fuchs, to his credit, diverges from Negri by introducing the subclasses of the multitude, as we saw above, but he still maintains the general idea of the multitude as a class. (Thanks to a reviewer for highlighting this difference.)
9. This framework was introduced to the readers of *The Information Society* by Ekbia and Evans (2009) in the discussion of "regimes of information."
10. Both of these—the original theory and its "updated" version—derive from extensive studies of socioeconomic developments in France. This poses the question of generalizability of the findings, especially in regard to the kinds of worlds identified by the theory. Although the findings and the theory built upon them can be arguably generalized, at least in their broad outline, to other developed societies of the North, what matters for our purposes here is the framework and the thinking behind it, not the specifics.
11. Boltanski and Chiapello argue that by their definition the network cannot in itself represent the support for a polity because, among other things, membership of the network remains largely indeterminate, hence leaving problematic the notion of the "common good" that is at the core of their formulation. That is why they introduce the notion of a "projective polity" instead.
12. Ekbia (2004) shows how Enron executives positioned themselves as obligatory passage points in the networks of technologists, fund managers, market analysts, and others, leveraging the resources of the network to their own benefit. The phenomenon, however, is more common than in malicious cases such as Enron's. Most of us are familiar in our life and work environments with examples of opportunistic "networkers," who use both institutional resources and the labor of others to increase personal profit, engaging as such in a type of "double exploitation."
13. It has been argued that skills (or reputations) acquired in online interactions are often usefully and productively

relevant to people's current or future roles as employees, contractors, and entrepreneurs. While this argument holds at a microlevel, it does not contradict the flip argument at the macrolevel—namely, that capitalists benefit from the skills acquired by their potential employees at no cost to them. Furthermore, as discussed further in the following, totalized online interactions also serve as a habituation processes that are then transferred to a 24/7 work ethos.

14. The current debate over the role of the Internet and its future as either a liberating medium or a force in the service of proprietary exclusionism (Albagli and Maciel 2010) can be considered as the current incarnation of Deleuze's point.
15. The parallel between this and the inverted logic of neoconservative ideologues should be apparent at once. Contrary to their claim that "the good fortune of the rich makes for the good fortune of the poor," it is indeed the "misfortune of the poor that makes for the good fortune of the rich" (Boltanski and Ciapello 2005, 375). Liberals, who seek to adjust the misfortunes of the poor in order to make the system more manageable through a "commonsensical approach," likewise fail to acknowledge the contribution of the poor to wealth creation.
16. Although on a different topic, Sørensen (2005, 145) writes: "Marx was certainly right about the dynamics of advanced capitalism. The engine of this dynamic is the pursuit of acquiring rent-producing assets through innovation and product development and by creating demand through advertising for profitable products." Notice how this argument brings together important elements of both Fuchs's and Arvidsson and Colleoni's analyses.

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