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The purpose of this chapter is to affirm the democratic potential of the Internet. Affirmation is called for by the context of contemporary critical theory, in which the Internet figures increasingly as the problem rather than the solution to the crisis of democracy. This marks a change from early optimistic assessments which still inspire a diminishing band of commentators. But mainstream academic opinion has turned against what is now considered “hype,” the exaggerated expectation that the Internet would contribute to the democratization of society.

I take the criticisms of the Internet seriously; however, I also note a certain exaggeration that makes me wonder about the motives behind the vehemence with which they are sometimes offered. Unqualified critiques such as these put me in the position of the little boy whose older friend shares the dreadful secret that there is no Santa Claus. Is it so very naïve to believe in the democratic potential of the Internet? Despite my reservations the critiques do bring important aspects of the Internet to light. We have had enough experience with it by now to realize that it is an ambiguous phenomenon unlikely to fulfil the promise of democratic transformation foisted on it in the early years. The critics have hit on some of the reasons for its limited and contradictory impacts. However, I will argue that their evaluation of the Internet is one-sided. They focus exclusively on its most problematic aspects and underestimate equally important accomplishments. An analysis of the Internet as a technology in its formative stage, before it has achieved a standard configuration, offers a more comprehensive view. I will show that the political and social contradictions of the Internet are reflected in its technological features that do not resolve into a coherent whole.

The paper has two parts. The first part discusses two important critiques of the Internet and argues that they mistake aspects of the technology for the whole. A second part introduces methodological considerations and applies the method to the Internet.

Two Critiques

In this section I will consider critiques of the Internet from the standpoint of political economy and cultural theory. I have chosen to respond here to Christian Fuchs and Jodi Dean, articulate champions of counter-hype who skilfully deflate the myth of the Internet as a revolutionary technology. However, I am not entirely convinced for reasons I will explain.

Christian Fuchs has contributed an innovative Marxist analysis of the Internet combining the theories of free immaterial labor and the “multitude” with audience commodity theory (Fuchs 2010). He argues that advanced capitalism is an information society in which the production of knowledge has become essential to the reproduction of capital. Marx claimed that the productive power of knowledge increases with the development of society. As a collective product, knowledge is essentially social but under capitalism it is privately appropriated. Like the common lands divided up and expropriated at the origins of capitalism, knowledge belongs to an ideal commons divided up and exploited by advanced capital. In Hegelian terms, Fuchs writes, the existence of knowledge (under capitalism) contradicts its essence (as social.) Fuchs concludes, “With the rise of informational capitalism, the exploitation of the commons has become a central process of capital accumulation” (Fuchs 2010, 190).

If capitalism is an information society, the knowledge producers constitute an exploited class. They include many workers in industry and government, students and researchers in universities, and also those whose “immaterial labor” contributes to social reproduction such as house workers and many types of service workers. Fuchs follows Hardt and Negri in emphasizing the significance of immaterial goods. These include communicative and affective goods as well as knowledge in the usual sense of formally constituted bodies of information. Since all these goods are produced in the commons through

communication and sharing, their appropriation by capital represents a “colonization” of an increasingly important sector of society. And since knowledge flows from these multiple sources, the industrial proletariat is no longer the only or indeed the principal exploited class. Fuchs adopts Hardt and Negri’s term “multitude” to refer to this complex new underclass.

This brings us to the crux of Fuchs’ argument about new media. The commons now includes those Internet sites where individuals communicate and thereby contribute to the sum of knowledge. The production of user-generated content becomes the occasion for profit-making activity on the part of the companies that provide the popular web platforms, but the users are paid nothing for their efforts. The unique structure of the Internet enables this new form of knowledge production and also supports the exploitation of the free labor of the producers. Since exploitation is measured as a ratio between wages and the value of the products produced, the rate of this new form of exploitation is virtually infinite! Fuchs draws on Dallas Smythe’s audience commodity theory to explain how companies realize profits from free labor on the Internet. Smythe argued that in selling advertising time, media companies were in effect marketing commodified audiences. Smythe’s argument was based on his analysis of television, the dominant medium at the time he wrote. Fuchs claims that social networking platforms such as Facebook operate in a similar way, accumulating users and selling them as an audience to advertisers. But now the exploitation has intensified since the audience no longer attends to a content produced by the corporations that exploit it, but produces its own content and freely offers it up to attract the audience the corporations commodify and sell. Thus the activity of Internet users “does not signify a democratization of the media toward a participatory or democratic system, but the total commodification of human creativity” (192). The broadening of the notion of exploited class suggested by Hardt and Negri and its application to users of the Internet responds to the actual fragmentation of struggles in advanced capitalism. Fuchs wants to construct a counter-hegemony based on a theme unifying these struggles. They can potentially converge around resistance to the colonization of the commons and the exploitation of the knowledge produced by the multitude. Whatever the nature of the exploited group, it contributes to the production of alien wealth. Together, they can resist capitalism as did the proletariat at an earlier stage. The theory cannot unite them, of course, but it can indicate the lines along which unity might be possible under the right conditions. Fuchs makes a powerful case for this strategy.

Although I agree that Fuchs has identified important aspects of the Internet, in what follows I will criticize several aspects of his argument. The Internet is truly the site of new forms of production and exploitation, as he shows. But his evaluation of the Internet is surprisingly reductive. He defines the Internet by the exploitation of free labor and the commodification of its products. Whatever the content of the communications, the simple fact that corporations profit from it determines its essence. It is obvious that user activity is profitable for corporations, but it is less obvious that this is the most important thing one can say about it. What is more, qualifying this activity as labor in the strict Marxian sense raises questions.

Fuchs overlooks a significant difference between capitalist production and production on the Internet. The difference has to do with the relation of capitalist form and content in the two cases. When capitalists appropriated the original commons by fencing it in and expelling the peasants, they transformed the land itself, submitting it to entirely new usages. The essence of capitalism is thus not just commodification but the transformation resources undergo as they are commodified. At a later stage labor was submitted to a similar transformation. Capitalism reorganized the labor process to generate abstract labor, i.e. labor that can be quantified and controlled to produce profit. Marx calls this “real subsumption.” The content, in the sense of what workers do at work, was penetrated by the commodity form.

As applied to television, the audience commodity theory of the mass media resonates with Marx’s theory of commodification at two levels: because audience attention can be packaged and sold, and also because the content toward which that attention is directed is rationalized and controlled. Only the first happens on Facebook or Google. It is true that corporations find ways to commodify the knowledge commons. But the commons is not reduced to a productive resource for capital as is the land appropriated by capital at an earlier stage. The economic aspect of the new commons is parasitic on an independent content, a wide range of meanings and activities that persist even after the imposition of the commodity form. The

content users produce for their mutual entertainment and enlightenment is commodified in the same way that telephone conversations are commodified by telephone companies operating as common carriers. The users' conversations are not controlled in a labor process managed by the telephone companies or social networking sites. The metaphoric link between factory labor and Internet "labor" breaks down.

Capitalism profits from many activities that are not labor, and communication on the Internet is just one of them. A sunny beach invites tourists who spend money in hotels and restaurants, but the tourists cannot be said to work for capital when they sunbathe on the beach. The university creates business opportunities for sandwich shops in the neighbourhood of the campus, but classrooms are not sites of free labor for the shopkeepers. Babies offer a business opportunity for diaper makers without performing free labor for the diaper company. The incidental character of the profitable activity associated with each of these situations belies reduction to their economic function. Similarly, information provided by users is not work producing surplus value.

There is a second problem with Fuchs's political economy of the Internet. He takes off from earlier media theory of television, as is explicit in his reference to audience commodity theory. He is right that audiences on the Internet self-assemble and are commodified and sold to advertisers. But the analogy between television and the Internet ignores an important difference between them. The audience commodity theory was proposed once television had achieved its standard form but the Internet is still in flux.

As a technical achievement, the invention of television had the potential to serve a multitude of functions. It could have had wide applications to local broadcasting and incorporated interaction in combination with the telephone. Perhaps a generation of technical work on such systems would have produced a sophisticated and effective medium for education, culture and political enlightenment. But the sad history of television charts its reduction to the narrow entertainment and news functions presupposed by the audience commodity theory (Williams 1974). There is no corresponding history of the Internet, at least not yet. Explaining the Internet with a combination of the television analogy and the theory of free labor forecloses the future of the technology.

At this point in its development, the analogy to the Internet that seems most relevant is not television but a public space such as the sidewalk. Social interaction on the Internet is not primarily labor but exactly what it seems, that is, social interaction. Although production undoubtedly goes on, the economics are not those of labor under capitalism. Capitalists take advantage of the Internet as do the owners of buildings who rent space along a busy street where people chat with each other and shop. Advertisers are like store owners who pay rent for a good location. Data mining user contributions enhances the value of the rental property by enabling targeted advertising. What is commodified thereby is what is effectively rented, space on web pages and through it audience attention. The users and their contributions are exploited to be sure, but only in the usual common sense meaning of the term, not in accordance with Marxist value theory.

Fuchs dismisses the democratic implications of the Internet because of its economic function, but the human significance of online interaction persists despite its place in the capitalist economy. The contributions of Internet users cannot be reduced to their economic function any more than can conversations on the sidewalk. Whether those contributions have a democratic value requires further analysis of their actual content in their context.

This is what Jodi Dean attempts in her cultural critique of the Internet (Dean 2005; Dean 2010). Let's consider her argument against Guy Debord's claim that reciprocal communication has an emancipatory potential mass communication lacks (Dean 2010, 108-113). Debord was the founder and leader of the Situationist International and the author of a critical classic of the 1960s, *The Society of the Spectacle*. He had a dystopian view of advanced capitalism very similar to the position of such Frankfurt School theorists as Adorno and Marcuse. Roughly summarized, they argued that a technocratic-capitalist elite dominates a subordinated population held in thrall by the mass media and consumerism. The introjection of system requirements makes coercive suppression unnecessary for the most part because the manipulated individuals reproduce the system spontaneously. This relation of voluntary subservience differs from traditional forms in that it is based not on moral conscience but on a libidinal attachment to

the rewards of conformity.

According to Debord, breaking out of this syndrome requires dramatic exemplary acts by a small minority of dissenters able to deconstruct the virtual chains binding the mass. He hoped that provocation from the margins would become a catalyst for the breakdown of the system. The French May Events of 1968 could be interpreted as a confirmation of this approach and in fact the Situationist critique of mass society did play an inspirational role in the movement. Similar actions by the New Left in the United States were less effective but succeeded in breaking the iron grip of 1950s conformism. We still benefit from that breakthrough today.

Dean complains that in emphasizing the top down nature of advanced capitalism, exemplified in the mass media, Debord idealizes the potential of bottom up activity to disrupt the system. But in fact, she argues, we now have the bottom up alternative to the mass media Debord dreamed of. It is called the Internet and, far from disrupting advanced capitalism, it reproduces it ever more effectively. Free communication on the Internet has not had the emancipatory effects foreseen by those like Debord who criticized the centralized, one-way communicative structure of the mass media. She argues that we have entered a new stage of “communicative capitalism” that renders older theories such as Debord’s obsolete.

Dean argues that far from defeating the dystopian vision of a totally administered society, most communication on the Internet reinforces it. The Internet erases the all-important gap between meaning and reality. The distinction between symbol and thing, fantasy and fact is essential to the possibility of both truth and resistance. On the Internet the distinction disappears and with it the authority of any particular meaning collapses. The disruptive feature of the Internet is the ease with which users externalize their own discourse and multiply alternative sources of information. No longer committed to anything, the user is unreal to him or herself. No longer persuaded by anything, the user cannot leave the cocoon of the derealized self. Reflexivity, which the Enlightenment identified with the autonomous individual, here renders the individuals helpless before the power of the system. This is in fact the hysteria of reflexivity, a bottomless pit of second thoughts, which destroys the “symbolic efficiency” essential to belief and action.

Dean relates these aspects of life in cyberspace to a strange phenomenon unforeseen by the early prophets of a society liberated by communication on computer networks. This is the enormous flood of useless contributions sent out by Internet users who neither expect nor receive any meaningful response from the imaginary public they address. This is indeed puzzling. At first one posts messages on Facebook in the expectation of a reply but gradually it becomes clear that no reply is forthcoming and eventually that none is necessary. The systematic lack of serious content and responsiveness undermines the emancipatory implications of communicative freedom. Sending trivial messages out into the void of cyberspace is not the true reciprocal communication about matters of substance imagined by those like Debord or Habermas who identified participation with democracy. Under these new conditions participation has no emancipatory effects.

To explain this phenomenon, Dean deploys the categories of Slavoj Žižek’s interpretation of Lacanian psychoanalysis. The explanation turns on the difference between desiring what one lacks, and desiring the lack itself. This latter form of desire involves obsessive repetition in the pursuit of something elusive which is attained so far as possible in the very pursuit of it. The pursuit itself becomes its own object and yields a kind of enjoyment which draws the individual in again and again. Anyone who has played a video game on the Internet will recognize the syndrome. In sum, Dean describes communication on the Internet on the model of obsessive-compulsive neurosis.

But the effects are not merely individual. Participation in the network shapes a subjectivity that is unable to contend with the political realities of capitalist society. This is a subject that is caught in a web of communication without content, a subject that substitutes debate for action, that mistakes participation for power. The individuals have the illusion of acting politically whenever they express an opinion or sign an online petition, but in reality they are victims of technological fetishism. The Internet does not automatically amplify their opinions into significance but simply registers them as empty placeholders for real political action. She writes, “Our participation does not subvert communicative capitalism. It drives it” (Dean 2010, 114). The circulation of messages on the Internet thus depoliticizes the population and

integrates it into communicative capitalism. Dean admits that there can be effective political uses of the Internet, but she considers these to be relatively insignificant compared to the overall depoliticizing effect of the technology in democratic societies like ours.

I find Dean's analysis of the failure of communication on the Internet persuasive up to the point where she draws these political conclusions. On what grounds does she consider the type of activity on which she focuses to be the Internet's most significant effect, able to actually reshape users' subjectivity? This is reductive. She assumes that with her explanation of Facebook, she has grasped the Internet's essence and the mechanism of political control. But she ignores many other types of online interactions. There are many sites that host serious discussions, sometimes concerning issues of political significance. Slashdot is an example. It is a meeting place for "techies." After the recent suicide of Aaron Swartz, they engaged seriously with issues of copyright and intellectual property law. Medical patients have used the Internet to inform themselves, for mutual aid and to influence health policy. In 1995 I studied the two discussion forums for ALS patients on the Prodigy computing network (Feenberg 1996). Today I see more than 100 listed in a Google search. Examples such as these are easy to multiply yet they play no role in Dean's explanation of the Internet.

The notion that the Internet replaces real political action inspires Malcolm Gladwell as well as Dean. In an article in *The New Yorker* he contrasts the courage of the black activists who sat in at lunch counters in the South with the trivial engagement of those who sign online petitions (Gladwell 2010). His argument can serve as a *reductio* of Dean's. Gladwell both confuses a means of communication which assists political action with the action it assists and also claims that users of the Internet generally make such a confusion. But where is the evidence that the people who sign Internet petitions would have gone out into the streets in the absence of an easy alibi for staying home? I am unconvinced both by the inappropriate contrast of online communication with "real" action, and by the notion that anyone is actually dumb enough to confuse the two.

I propose an alternative hypothesis. Dean and Gladwell are not wrong to argue that on the Internet individuals are able to express political opinions before an imaginary public effortlessly and at no personal risk. This does change things but not in the way they claim. The difference is in the testimonial value of the expression that is much reduced when it involves no effort or risk. I think it unlikely that those who sign online petitions believe they have done something comparable to sitting in at a segregated lunch counter. They are perfectly aware that their views expressed online will not have as much impact as the same views expressed in a context that shows the full extent of their commitment. Hence they can hardly expect radical change in response to online petitions as they might from demonstrations in the street. But by the same token there is also no reason to suspect a substitution of the one for the other. If anything, the ability of dissenting views to reach a public, however imaginary, may encourage others to come forward. What is involved there is play with isolation and popularity rather than illusions about political action. The loneliness of the dissenter is reduced in a society that has the Internet.

Dean's critique depends on the notion that we have moved on from the type of capitalist society criticized by Debord and the Frankfurt School to a new stage that is based not on top down hierarchical control and psychological introjection but, paradoxically, on free communication and participation structured in such a way as to reproduce the system. Her approach is the culmination of a trend that begins with Foucault's rejection of Marxist explanations of capitalism in terms of class power, for which he substituted his own notion of power as a play of discipline and resistance. He argued that capitalism depends less on political control than on the shaping in a wide variety of institutions of a type of subjectivity adjusted to the institutional requirements of capitalism. Today his approach seems more relevant than ever to explaining the perpetuation of capitalism in a society that offers ever more possibilities of free self-expression.

The transition to this new paradigm has inspired a great deal of recent discussion, such as Deleuze's concept of the "control society" (1992) and more recently Boltanski and Chiapello's (2007) concept of the "new spirit" of capitalism. Whereas the anti-dystopian theories of earlier critics focused on technocracy and the seductive power of consumer goods, these new critics argue that we are now faced with the self-subjugation of the population through communicative interaction and participation.

Such theories, like Dean's, are based on transformations taking place in the advanced sectors of the

economy where flexible career paths, personal branding, post-fordist participatory production methods and now also blogging and social networking play an important role. But the older theories of technocratic control and consumerism are still convincing. Most of the population still lives in the world they describe, ruled not by obscure protocols but by visible hierarchical superiors legitimated by claims of technical competence. The masses are attached to the system through material rewards more than through the structures of the network. Perhaps today some of those rewards take the form of enjoyment of communication as such, without hope of significance or reciprocation, as Dean explains. But this hardly replaces automobiles and home appliances, houses and sports, as basic integrative mechanisms. Furthermore, despite the cognitive chaos of the Internet most people still accept the claims of doctors and scientists, teachers and preachers, and many people still follow political leaders and moulders of opinion in the mass media.

The discovery that communication can be absorbed into the rituals of consumer society is an important insight, but it is still the case that in this society truly free, reciprocal bottom-up communication has emancipatory potential and such communication does occur on the Internet. Indeed, every radical movement today builds on it. I therefore disagree with Dean's quasi-quantitative evaluation of the relative significance of politics versus integrative activity on the Internet. Politically significant communication may be less common than the sort of thing Dean criticizes, but it nevertheless plays an important role. Dean's critique depends on an illusion specific to the technology of the Internet, its ability to record everything that happens on the screen. I can best explain why this is important through the metaphor of the sidewalk I introduced in the discussion of Fuchs' theory. On the sidewalk many things go on. Since we don't have transcripts of the communications that take place there, as we do for the Internet, we cannot compare the various activities as to their radical political or integrative effects. Everything is discussed on the sidewalk, but surely most of it is as boring and pointless as the chatter Dean analyzes. Because it is ephemeral, no one criticizes the sidewalk for this reason. The democratic significance of free speech on the sidewalk cannot be reduced to a question of proportions.

Despite the exorbitant influence of a small number of popular web sites, there is still a great deal of variety and room for non-conformity. Even the passive expression of dissenting opinion is an advance over the near universal consensus in which those my age grew up. Debord's hope that an alternative to the mass media would make a difference is not wholly disappointed. We live in a far more contentious social world than the happy days of yore. It is true, to be sure, that there is little effective political resistance, but I see no evidence that the Internet is responsible for that. It cannot simply be dismissed because it has not solved the difficult conundrum of getting Americans to join radical political organizations. The cultural incapacity of Americans to create a durable Left requires a better explanation than the supposed depoliticizing effects of MoveOn.

In sum, I do not agree with Dean that the Internet as a whole is usefully characterized by the type of interaction taking place in sites such as Facebook, nor that it is responsible for the weakness of Left activism today. Which brings me back to my starting point. What explains the vehemence with which the Internet is criticized by so many intellectuals today?

I believe critics like Fuchs and Dean are caught up in an internecine struggle within the contemporary intelligentsia that distracts them from important aspects of the Internet. The Internet was hailed at first in such expansive terms that a critical reaction was inevitable. It has not had the revolutionary impact that was promised, but the expectation that it would was always unrealistic. A critique based on disappointment with such an unrealistic expectation is distorted by its dependence on its object.

The collapse of the New Left created a demand for an alternative to political organization. Given the idealization of science and technology in American culture, it is not surprising that many American radicals sought a technical fix. An erroneous self-interpretation among participants in open source programming, and other types of online "commons" promised just such a fix. But clearly the Internet is not able to bear the weight of these utopian hopes. It is useful to criticize exaggerated claims, but at this point in time we should have gotten beyond the exclusive focus on them. The Internet as we know it is under attack from serious enemies. Its important, if limited, contribution to democratic politics may well be extinguished in the coming years by changes in regulation and technology.

The Layers of the Internet

Fuchs and Dean offer critiques of the Internet based on political economy and a cultural theory informed by psychoanalysis. They pay little attention to the technology of the Internet itself. To the extent that technology figures in their accounts at all, it appears as finished and complete, with a single dominant social impact.

The Internet is a technical system first and foremost. Its social meaning is inextricably intertwined with its technical character. By the same token, our social life is now inseparable from the technology. Much social theory fails to make this connection. We are accustomed to think about society in abstraction from the technologies that make it possible. Even Marxists tend to abstract the economic aspects of capitalism from the underlying technology.

In arguing for attention to technology I am not returning to an outmoded technological determinism. We need a method that recognizes the essentially technical character of society and the social character of technology. Just as there are divisions in society, so this method must uncover the conflictual character of the technical sphere, reflected in the ambivalence of technical systems, the potentials they contain that are foreclosed by the dominant social powers and the resistance to those powers. I call such a method “critical theory of technology,” or “critical constructivism” (Feenberg 2010, chapter 4). It is based on ideas drawn from Frankfurt School Critical Theory, from Marx, and from constructivist technology studies.

From Marx and the Frankfurt School I derive the notion that important technologies in capitalist society are adapted to the requirements of the capitalist system but also contested from below. I borrow from the constructivist approach the emphasis on the role of interpretation and networks in technical development. The constructivist contribution introduces contingency into the analysis of technical development, while the Marxist contribution ties the contingent social influences on technology to hegemonic forces and counter-hegemonic struggles. Design is the terrain on which social groups increasingly attempt to advance their interests through technology.

There is a basis for this approach in one of Marx’s important texts on method, the “Introduction to the Critique of Political Economy.” Marx writes that “The concrete is concrete, because it is a combination of many objects with different destinations, i.e. a unity of diverse elements. In our thought, it therefore appears as a process of synthesis, as a result, and not as a starting point, although it is the real starting point and, therefore, also the starting point of observation and conception” (Marx 1904, 293).

This passage anticipates the genealogical method Foucault derives from Nietzsche. Social objects such as artifacts and institutions are assemblages of various components joined by their functional role in society rather than through an intrinsic essence. The parts may disaggregate and recombine in a different social context. Marx’s example is money which has a different form and meaning at different stages in social development. The history of an artifact or institution cannot rely on an a priori definition of a fixed substance that undergoes the impact of external accidents, but must trace transformations in its construction out of “diverse elements.”

This genealogical approach can be applied to technology. An artifact’s line of development appears to reveal the implications of a pre-existing essence, but in fact its elements and usages change in ways that favor some possible branches of development and foreclose others. Looking back from the standpoint of the successful branch we project the criteria of development it fulfills back onto the origin, which then appears to initiate a teleological process. But this is an illusory teleology. A proper social history would uncover transformations rather than assuming stabilities.

In such cases the history of the object is the history of the social forces contending for control of its technical code. Technologies are complicated by the diverse interests they serve. These interests impose more or less coherent assemblages of structures and functions. Technologies may appear to depend simply on the coherence of the causal mechanisms they enlist in human purposes, but a deeper level of analysis reveals ambiguities due to the many social influences they represent.

Technologies are concrete in Marx’s sense because they realize in technical form various layers of function and meaning corresponding to the actors who shape them. The transformations technologies undergo as their technical codes are contested in the public sphere take different forms. Some technical

controversies are zero-sum games in which the winner takes all, but the inherent flexibility of technology often makes compromise possible. Conflicting interests may find a *modus vivendi* or be reconciled in the final design. In such cases each relevant social group contributes a layer to the final result. Layering is thus a useful concept for understanding the design process and competition between designs.

Design proceeds through bringing together layers of function corresponding to the various meanings actors attribute to the artifact. The study of technology must identify the layers and explain their relations. Technological closure, the standardization around a unique technical code, may involve trade-offs, compromises resulting in a less than perfect design for all parties to the controversy. But sometimes innovations satisfy all the contending parties without loss of efficiency, making alliances between actors possible where formerly there was conflict. Critical constructivism employs the concept of layering to explain these unique characteristics of technical politics.

Can we apply this approach to the Internet? From the standpoint of technology studies it seems clear that the Internet is at an early stage in its development, when many contending forces act on its design for sometimes conflicting, sometimes complementary purposes. Because Fuchs and Dean define the Internet in terms of economics and the mainstream culture of social networking, its political usages appear as anomalies. Their analyses are confined to a single layer of functionality. Another critic, Darin Barney, presents a similar view, writing that “these alternative and resistant practices still represent a tear in a salty sea of hegemonic encounters with the broad scope of digital technology and its culture. To take the measure of the present conjuncture we need careful work that documents and even promotes tactical political uses of these technologies, but we also need to place these uses in the broader context of what remains a very powerful set of technologies configured to advance and secure what Jacques Rancière has described as the ‘unlimited power of wealth’” (Barney 2011). In sum, the Internet is essentially a corporate instrument whatever other functions it may exceptionally serve.

Judgments such as this assume that business has been far more successful in corraling the Internet for its purposes than is plausible given the enormous variety of content and initiatives that can be observed. But the counter-argument can go deeper than such quantitative comparisons. A serious study of the Internet must take into account its technological evolution, which is still incomplete. This refocuses the discussion. Dean cites Galloway and Thacker (2007), who criticize “the uncanny, unhuman intentionality of the network as an abstract whole” (Quoted in Dean 2010, 114). This is what she tries to explain, but the assumption that the Internet forms a “whole” is questionable. A more comprehensive understanding of the Internet would find a place for its political aspect within a complex matrix of functions. The constructivist approach allows for such complexity (Feenberg and Friesen 2012).

Since many actors objectify their demands in the features of the technology, no simple definition can explain it. The Internet is not unified but is intrinsically divided and conflicted. The analytic problem consists in disentangling this complexity and assigning each aspect of the technology to the social forces underlying it. I will focus here on two of these forces, the business interests that are attempting to transform the Internet in accordance with their needs, and those public actors that employ features of the Internet to participate in the life of the society. They both draw on resources available on the Internet in its current multistable condition, but they emphasize different features in different combinations.

The future of the Internet depends on which actors prevail in determining its technical code. Business interests support what I will call a “consumption model” of the Internet that corresponds to a technical code incompatible with some of the requirements of what I will call the “community model.” The two models co-exist today on a system without clear definition. The consumption model privileges features that support commercial transactions and advertising while the community model relies on other features that support online community and public life. The two models each vie for control of the future of the Internet, its ultimate technical code, but so far neither has been able to prevail (Feenberg and Bakardjieva 2004).

The Internet is thus a terrain of struggle rather than a definite “thing” with a singular essence. Fuch’s argument highlights important features of the consumption model while ignoring the competing community model, which does not fit his schema. But incoherence is characteristic of a technology that is still in its early stages of development, before it reaches closure around a univocal definition of purpose.

The critique of the Internet should focus on the struggle rather than assuming it is already over and done with to the exclusive advantage of business. In what follows I will attempt to unravel the complexity into the two distinct strands that describe the Internet today.

From the critical constructivist standpoint, the Internet is an ambiguous phenomenon. The struggle over its technical code is an attempt by the actors to resolve the ambiguity by privileging the layers of the technology that favor their interests. Closure around one or another technical code can occur in two different ways, through a radical simplification of the features of the Internet or a new configuration that recombines and reconfigures those features to the satisfaction or at least the passive acceptance of all influential actors. I contend that we do not and indeed cannot know how the ambiguity will be resolved at this time. The best we can do as theorists is to chart the conflicting layers and identify the actors behind them.

The Internet has five layers appropriated by these actors for their different purposes. These layers are non-hierarchical structure, anonymity, broadcasting, data storage, and many-to-many communication. In some cases actors share layers, making a different use of the same resource. But in other cases, pressures to change or combine layers in new ways to accommodate special interests threaten to alter the character of the Internet. This is the scene of struggle that must be analyzed in detail to understand the state of the technology.

1. Non-hierarchical structure. The non-hierarchical structure of the Internet complicates business applications while favouring public usages. The Internet protocol creates a disseminated network rather than a centralized system like a broadcasting network. There is no one at the helm, no Rupert Murdoch who can kill a story he does not like, no ABC or NBC that can dominate the news, no company that can dictate taste and trends. This is not to deny that advertisers get their message out, or that certain voices on the Internet are more influential than others. But that is a far cry from the kind of predictable, well managed, central control business prefers. Neither advertising nor the politics of influence give corporations control over content comparable to their television and radio networks.

But does business want control? The picture is complicated by the huge revenues earned by Facebook and Google. These sites dedicated to communication and information sell advertising rather than entertainment. The entertainment is provided by the users themselves. What is called Web 2.0 seems to be a new model of capitalist enterprise based not on control of users but on their agency. Those who generalize from these examples claim that we have entered a new stage of capitalism which Jodi Dean calls "communicative capitalism." However, successful as they are, they represent a small percentage of the US economy. I doubt that they inaugurate a fundamental change in capitalism. Furthermore, the distribution of entertainment will dramatically increase the wealth to be extracted from the Internet. This is what everyone is waiting for, but progress has been slow.

The problem is clear from a consideration of the alternatives. A business-controlled medium such as television protects intellectual property and focuses users' attention on a restricted set of offerings and advertising. The Internet in its present form cannot come close to this ideal. The French Teletel system, a successful early computer network based on a different protocol, explored a promising alternative business model (Feenberg 2010, chapter 5). It tracked the usage of services and charged users by the minute on their phone bills. This sort of intimate detail about user activity and control of billing is simply not possible with the Internet protocol. It was not conceived with business in mind and is not adapted to its needs. The military created the Internet protocol for a system of trusted computing centers. It is still marked by this origin today. Advertising as a revenue source came rather late to the Internet and is a work-around. It is by no means clear that the advantages of targeting, made possible by data mining social networks, compensate for the limitations imposed by the protocol. Subscription services offer another business model, but so far they have not been very successful. This may change as more entertainment is delivered over the Internet.

Ideally, a consumption oriented technical code would impose greater security to insure good service and better control over distribution to protect intellectual property. Business interests have called for an end to network neutrality to insure that commercial services such as entertainment get greater bandwidth at the expense of public usages and communication. They are making progress on this front but the struggle is

by no means over. So far no technical fix such as “watermarking” has succeeded in preventing theft of intellectual property. It is difficult to say what modifications of the Internet protocol would help. Instead, business has turned to legal suppression and more recently to offering convenient services that attract purchasers for goods that can be accessed elsewhere at no cost. Nevertheless, the Internet has had a massive impact on the entertainment industry, which will continue to grow unless radical technical solutions are implemented. If such solutions prevail, the Internet would be transformed into something resembling television, a system controlled by a few networks and cable companies rather than the decentralized, non-hierarchical configuration we currently enjoy.

2. Anonymity. Apart from these business related inconveniences of the non-hierarchical structure, it supports anonymity, which has favored political activity on the Internet. Anonymity protects any form of stigmatized or anti-social activity. Much of this activity has a commercial character, for example, the paid distribution of pornography. But anonymity also serves community. Individuals who would otherwise be fearful of the consequences of expressing unpopular views are free to do so in forums where they debate the issues of the day or gather with others to clarify their ideas and act. Although it is possible at some expense to break through the veil of anonymity, it has been used effectively to build political opposition. In countries under dictatorial rule anonymity has had explosive consequences. Since both commercial actors and online activists benefit from anonymity, neither has lobbied for obligatory real name identities. That is primarily a concern of governments, a third relevant social group. But so far, at least in democratic societies, government has mainly offered legal and regulatory support for the demands of the other two actors. The surveillance and control functions of the Internet have only affected its meaning in countries such as China.

3. Broadcasting. Broadcasting on the Internet has the potential to reach millions. It marks an astonishing advance over earlier ways of reaching a public. The feature is free and instantaneous, which makes it attractive for many different kinds of actors. Entertainment can be delivered to mass audiences with this feature. In the consumption model the Internet functions as a replacement for television, CDs and DVDs. Since we are only at the beginning of this development it is impossible to say how drastically it will reshape the Internet as media companies struggle to protect their intellectual property and ensure the best possible delivery of their products. The community model also relies on broadcasting for public interventions, protests, fund raising and other political tasks. Combined with anonymity, broadcasting is a powerful political tool. It has been used to mobilize citizens on a large scale for demonstrations and elections. Of course political movements managed earlier with technologies such as the telephone, the mimeograph machine and the cassette tape. As Fuchs and Dean would surely agree, it is silly to call the Arab Spring a “Facebook revolution,” but the Internet does offer much improved tools for rapid mass mobilization. So long as communication on the Internet is free and anonymous, broadcasting will serve both commerce and community.

4. Data Storage. Stored data on the Internet has a variety of functions. The consumption model privileges storing the data for commercial purposes. Data is collected by the owners of social networking sites, analyzed, and sold to improve the performance of advertising. Users search the Internet for goods, which has created huge new markets linking buyers and sellers globally. Stored data is also available to governments for surveillance. Occasionally the dissenters get hold of data embarrassing to governments and corporations and publish it on the Internet for all to see. In the community model data storage need not be privately owned although currently most online community activity takes place on proprietary networks. Even within that context, certain kinds of data access are restricted to protect privacy. Companies such as Facebook and Google promise to restrict their intrusions to data mining and not to examine individual accounts. The data is only fully available to members of each online community (and in rare cases the police). It can then be used by individuals to reconstruct their past statements and commitments, much like a diary or agenda. It is especially useful to online communities as a record of their history.

Data storage would be confined to community usages if online communities moved away from proprietary platforms or if privacy rights were interpreted to prohibit data mining. By the same token, proprietary networks threaten online community when they go too far in breaking down privacy to

improve advertising. So far a rough equilibrium has been achieved in which data storage is useful to both business and ordinary users.

5. Many-to-many communication. The Internet supports online community, gatherings of like-minded individuals, through a unique feature, the ability of users to share a common file. Access to the file is access to all those with similar access. Messages sent to the file are seen by all in contrast with mail and email which are addressed to individuals rather than to a group. Online community is an important innovation. It offers the first electronic mediation of small group activity.

Most social life goes on in small groups, as well as education and political discussion. Since online communities assemble groups without regard for geographic distance, scattered individuals can come together around a theme of discussion or struggle that would otherwise be unrepresented in public life. In the early days of commercial computer networking and the Internet, many-to-many communication supported the invention of exciting new forms of sociability. This is the background to the expectation that computer networking would bring about revolutionary social change. No doubt the prophets of networking exaggerated the transformative power of technology, especially the computer. But what Dean has shown is that this expectation was disappointed not simply because of the limited impact of the technology, but because the evolution of many-to-many communication did not amplify the original pattern on which the expectation was based. Instead, a new pattern emerged in which most many-to-many communication failed to produce true community. The failed communities that characterize this stage have integrative effects.

It may well be true as Dean contends that most activity in online communities such as Facebook is empty of meaning. And the exploitation of the data produced by these communities is indisputable, as Fuchs argues. Indeed, there are even groups created by corporations to place products or to identify changing tastes. But the same is true in one way or another of every public venue. And there are still a great many online communities in which authentic reciprocal communication takes place. It is no surprise that capitalism seeks and finds opportunity everywhere. The critics do not explain why this should uniquely qualify the Internet when so many different kinds of groups exist engaged in so many different activities. Online communities engage not only in conventional politics but in an expanded notion of politics in every area of common life. Medical patients form groups to share ideas about their illnesses and to influence care and research. Parents use the Internet to organize protests over school policy. Users of public resources such as parks mobilize through the Internet when the resource is threatened with budget cuts. All sorts of civic problems and frustrations become the occasion for community action. In each case the participant interests of members of a socio-technical network are articulated politically. This “subactivism” is an extension of politics into daily life; it shifts the boundaries of the personal and the political (Bakardjieva 2012).

The ambiguity of these features explains how they can serve in very different strategies of very different actors. The dissemination of popular films, pornography and calls to revolution all employ broadcasting. Anonymity protects criminals as well as dissenters. Online communities gather rock fans as well as revolutionaries. And so on. Different combinations of these layers favor consumption or community. In its present form the Internet is compatible with both but it will only remain hospitable to online community and the political activities it supports so long as something approaching the free flow of information and network neutrality are preserved. These conditions, which are accidental consequences of the Internet’s military origins, are incompatible with the most ambitious plans of the business users of the network, but they must be protected for the Internet as we know it to survive.

Conclusion: A New Dialectic

The fracture in the meaning of the Internet, the multi-functionality of its features, and the struggle over its future are not unique to this technology, although they may be more visible here than elsewhere. All technologies establish networks in the sense that they bring people and things together in combinations determined by a mix of symbolic and causal relations. And many of these technological networks are traversed by contradictory programs representing different and conflicting interests. The tendency to define the network by the program of the dominant group enrolled in it must be resisted. All programs are

equal in principle. Each has a claim to appropriate the network's resources and to attempt to organize the network around the interests it represents (Feenberg 1999, 114-119).

Consider the case of a factory belonging to owners who organize it to make a profit, its workers who attempt to defend or enlarge their share in the wealth it produces, and its community that imposes limitations on its activities in response to externalities such as pollution. Legally considered, the owners' program defines the only legitimate purpose of the factory, but in reality no one party has a monopoly of its resources. Each actor views it from a different perspective, which reveals different aspects and privileges different modes of action. All three must co-exist, and therefore must make concessions to each other. Their programs and compromises may alter the technologies that bring them together.

This is the pattern we observe in the case of the Internet, with frequent overlapping of functions and occasional conflicts. Most users of the internet are at ease in its complexity and don't try to sum it up in a single concept. They shift from one program (in both senses) to another as the need arises. But the critics have selected one aspect of the whole and conceptualized the entire network on the terms of a single program. I have attempted here to restore the ambiguity and the complexity of the network by analyzing it as a contested technology.

In this respect technology is an instance of a much larger problem, the ambiguity of rationality itself. The critics of the Internet propose a radical revision of the Frankfurt School's dialectic of Enlightenment. The original dialectic in Adorno and Horkheimer showed that progress in rationality has not had the liberating effects the Enlightenment expected. Fuchs and Dean propose a structurally similar theory. We expected participation and communication to be liberating but in fact they have had the opposite effect. Dean in particular has developed a version of the concept of integration through protocol, through the structure of interaction, that was pioneered by Foucault and Deleuze. Presumably, we have entered a new stage in the development of capitalism in which people self-integrate through their interactions, without the need for the legitimization strategies and consumer rewards that integrated the society at an earlier stage.

Dean's analysis of the Internet is comparable to Marcuse's theory of repressive desublimation. Marcuse showed that lifting the repression of sexuality did not have the emancipatory consequences one might have expected but instead strengthened the grip of the system. Like Marcuse deflating the politics of sexual liberation, Dean deflates the politics of cyberspace. But like Marcuse, Adorno and Horkheimer were careful to propose a rational critique of rationality (Horkheimer and Adorno 2002, xvi). They were aware that there is a risk in criticizing coopted emancipatory advances. The risk is that one will lose sight of the advance itself in the critique of its cooptation by the system. Underestimating what has been gained in criticizing the cooptation of emancipatory advances results in political paralysis.

In fact, there is far more critical thought and radical political action today as compared with the high point of the mass media in the 1950s and the early 1960s. Dean's theory is one-sided. It leaves out the un-coopted uses of the technology that still have liberating implications. We need to study the Internet in much more careful empirical terms in order to understand this ambiguity as it applies to communication and participation. This is what I propose in arguing that the Internet is a contested technology.

This approach shows that condemnation of the Internet is premature. There are more pressing problems today than refuting Internet hype. What about the corporate forces attempting to take over the content of the Internet for the distribution of entertainment? And the intensification of government surveillance? How can such challenges be defeated when we focus our critical energies on precisely the aspect of the Internet that is threatened by these hegemonic forces, namely its communicative role? It is time to move on from counter-hype to a serious confrontation with these threats to the Internet, imperfect though it be. It is still an evolving technology at an early stage in its evolution. We do not know what final form it will take. Keeping an open mind about the Internet's future is not a naïve, uncritical stance but, on the contrary, makes political engagement with that future possible.

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