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Post-Industrial and Digital Society

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working technologies have facilitated some tremendously harmful shifts in the global economy, and in our working lives. They are also being used to find spaces for less hierarchical production, gifting, solidarity, and mutual aid. Anarchists (within and outside of academia) should be looking for these potentials and practices, including those that exist at the margins, and finding ways to nurture and expand them.

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Nurturing Alternatives

This chapter should make it clear that, despite early proclamations to the contrary, the Internet is not a separate space. It does not exist outside of state or corporate power, and offline structural oppressions do not magically disappear online. The flip side of this is that the tools and practices facilitated by networking technologies have material impacts, including providing resources, facilitating organising, and creating experiences of mutual aid, solidarity, and less hierarchical organising in action. Networking technologies are now deeply integrated into our political, social, and economic systems, and are important sites of both domination and resistance.

The Internet we have today has been shaped by capitalism and state power, but it is not entirely controlled by state and corporate interests, nor does it fully serve them. People with alternative visions of how the world might work are using the Internet to create their own tools and infrastructures and are repurposing corporate social media for their own purposes. Activists continue to contest the structure and governance of networking technologies, including the role of large corporations like Facebook and Twitter in shaping our experience of the Internet. The outcome of this is far from certain: while the Internet appears to favour decentralisation of power, it would be difficult to look at the world as it is today and argue that the Internet necessarily brings us closer to the ‘matrix of interconnectivity, mutuality, and accountability’ which Ramnath has suggested characterises anarchist orientations.

Unsurprisingly, there are few sweeping pronouncements to be made about the role of networking technologies in supporting or undermining anarchist struggles. Just as in the past, attempts to build alternatives that are less hierarchical, more sustainable, and more inclusive must exist in the interstices between existing systems, repurposing tools built for other uses and working to create alternatives and protect them against both external threats and the emergence of internal hierarchies and oppressions. Net-

net to engage in resistance and peer education. Keller, for example, discusses teenage girls' blogging as a space for building community and redefining feminism, and I would argue that while girls' use of the Internet tends to be the subject of frequent moral panics, girls are at the forefront in terms of the remarkable use of social media like Twitter, Tumblr, and Instagram to develop and spread a more radical, horizontal, and intersectional politics.⁷²

At the same time, many practices of resistance online are ephemeral and crisis-driven: there are frequent appeals shared across social media for those facing unexpected medical bills, eviction, or deportation. While many crowdfunding appeals are positioned as charity, they also often make reference to ideals of solidarity and mutual aid.⁷³ As I write, activists in Australia are attempting to crowdfund practical assistance for asylum seekers who are under attack by the Papua New Guinea Government while being indefinitely detained on Manus Island after attempting to apply for asylum in Australia.⁷⁴ These appeals, of course, can do little to undermine the structures of oppression which create crises: they cannot erase borders, decriminalise sex work, provide free and open healthcare, or end domestic violence. However, in addition to alleviating immediate crises, they can provide experiences of solidarity that help people to believe in other ways of being, and they can at least temporarily resource projects of resistance.

⁷² Jessalynn Marie Keller, 'Virtual Feminisms', *Information, Communication & Society*, 15: 3 (April 1, 2012), 429–447.

⁷³ As many of these are shared by individuals who are particularly vulnerable due to disability or legal threats, including those engaged in sex work, non-citizens, and people at threat of domestic violence, I have chosen to avoid citing examples from individuals.

⁷⁴ Magella Blink, 'Click Here to Support Manus Emergency Fund', gofundme.com (October 11, 2017), <https://www.gofundme.com/mgj6fs>; Gifts for Manus and Nauru, 'How to Donate' (March 7, 2016), <https://giftsformanusandnauru.org.au/how-to-donate/>.

Abstract

This chapter explores some of the diverse changes to production and consumption facilitated by the Internet, particularly those that embody a shift towards non-hierarchical and participatory practices. Some of these practices are explicitly informed by anarchist praxis and history. The development of independent, non-commercial communication infrastructures online has frequently been driven by a concern with evading state censorship and surveillance. These communication infrastructures are also often produced by collectives drawing on anarchist principles in their organisational forms. Other emerging practices are heavily influenced by the US libertarian subculture associated with early Internet development and with the large multinational companies that continue to shape the Internet. More interesting potential lies, perhaps, in marginalised practices being enacted outside the gaze of hacktivists, Bitcoin fanatics, and venture capitalists. Anarchist praxis is frequently at its most disruptive in the networks of solidarity and mutual aid facilitated by the Internet. By developing gift economies; disrupting the assumption that only paid labour is meaningful labour; and developing radical, anti-capitalist, and anti-hierarchical discourses around labour and consumption, they offer new possibilities growing within the cracks of the old system. These practices are deserving of more attention than they have received from anarchist theorists to date.

The Internet has had massive and complex social, political, and economic effects, and there is, unsurprisingly, no single anarchist position on how to understand these effects, or on finding potential for resistance in the interstices of existing power structures. Claims that we live in a post-industrial economy, a digital society, or an information society must come with caveats. We are living in

a world which is being profoundly changed by a range of information technologies, including microprocessors, the Internet, mobile phones, and complex software. These technologies are imbricated with shifts in the global form of capitalism; Manuel Castells argues that the information technology revolution was instrumental in the reshaping of capitalism from the 1980s onwards, and at the same time these technological changes were shaped 'by the logic and interests of advanced capitalism, without being reducible to the expression of such interests'.¹ Castells argues that the revolution in networking technologies:

originated and diffused, not by accident, in an historical period of the global restructuring of capitalism [...] the new society emerging from this process of change is both capitalist and informational, while presenting considerable historical variation in different countries.²

In addition to the profound and varied social changes that have accompanied these shifts, there are also a range of changes to the production, distribution, and consumption of material goods. While we are clearly not 'post-industrial' in the sense of the industrial production of material goods having ended, even this production has itself been radically changed by networking technologies, which facilitate just-in-time production and increased surveillance of workers.

Overlapping with Castells' expansive discussions of the information society, some analysis has referred more specifically to the emergence of a digital economy.³ Tiziana Terranova notes that this 'seems to describe a formation that intersects on the one hand with

¹ Manuel Castells, *The Rise of the Network Society: Vol. 1* (Oxford: Blackwell Publishing, 2000), 13.

² *Ibid.*, 13.

³ Castells, *ibid.*; Manuel Castells, *The Internet Galaxy: Reflections on the Internet, Business, and Society* (Oxford: Oxford University Press, 2001); Manuel Castells,

tive and immaterial labour online.⁶⁸ Black, Afro Indigenous and NDN women in particular noted that their analysis and labour are frequently appropriated and largely uncredited.⁶⁹ Those who are excluded or marginalised even from anti-hegemonic projects online engage in their own practices of resistance. Anarchists should attempt to learn from, and act in solidarity with, these struggles, even when they are not explicitly associated with anarchism.

Many of these efforts involve the use of networking technology to build networks of mutual aid in the face of the threats posed by capitalism and corporate power as they intersect with other forms of oppression, including homophobia, misogyny, racism, and ableism. For example, Randi Harper created the Good Game Auto Blocker, a tool which helps to protect targets of mob harassment on Twitter, who are disproportionately women, trans people, and other marginalised people.⁷⁰ Tools like these have limitations, but they do provide protections that Twitter and other corporate social media have proved unwilling to implement. To facilitate this work, Harper relies on voluntary mutual aid from others: her Patreon account allows hundreds of small donations to fund servers, pay essential bills, and (a sadly unrealised funding goal) pay for health insurance.⁷¹ We might also look at the ways in which teenage girls (whose political agency is frequently trivialised) are using the Inter-

⁶⁸ Kylie Jarrett, 'The Relevance of "Women's Work": Social Reproduction and Immaterial Labor in Digital Media', *Television & New Media*, 15: 1 (January 1, 2014), 14–29.

⁶⁹ Collected authors, 'This Tweet Called My Back', *Model View Culture* (blog) (December 13, 2014), <https://modelviewculture.com/pieces/thistweetcalled-myback>.

⁷⁰ Randi Harper, *Ggautoblocker: Good Game Auto Blocker*, Perl (2017), <https://github.com/freebsdgirl/ggautoblocker>; Gersande La Flèche, 'Flickering the Gaslight: Tactics of Organized Online Harassment', *Model View Culture* (blog) (March 19, 2015), <https://modelviewculture.com/pieces/flickering-the-gaslight-tactics-of-organized-online-harassment>.

⁷¹ Randi Harper, 'Randi Harper Is Creating Online Activism and Open Source Anti-Harassment Tools', *Patreon* (2017), <https://www.patreon.com/freebsdgirl>.

and instead look to the ways in which black women's marginality allows them a vantage point from which to critique dominant hierarchies and engage in liberatory theory and praxis,⁶⁴ anarchist scholars would benefit from continually looking to the margins for liberatory practices. Mujeres Creando, an anarchy-feminist group, have said that they are anarchists, 'by our grandmothers', and I agree with them: 'that's a beautiful school of anarchism'.⁶⁵ I came to anarchism not by reading Bakunin or Kropotkin or attending meetings but rather by experiencing the ways in which people, and particularly women, around me (and, as I grew older, online) made power inequalities visible, provided support for each other, and dreamed of alternative political systems. There are difficulties in citing the multitude of practices, conversations, and visions involved here, not least the ethical challenges of subjecting conversations intended for a smaller audience to the context collapse of appearing in an academic book. Research in this area must, despite the demands of neoliberal academia, be willing to be slower,⁶⁶ participatory, and engaged with the complexities of online research.⁶⁷ One starting point for such research might be the recognition of the white, male-dominated nature of hegemonic political culture of the Internet.

As in many other areas, women's engagement in subversive practices online are frequently overlooked or undervalued. Kylie Jarrett, for example, discusses the failure of most analysis to conceptualise, or even acknowledge, the centrality of women's affec-

⁶⁴ bell hooks, *Feminist Theory: From Margin to Center* (Pluto Press, 2000).

⁶⁵ Julieta Paredes, 'Interview with Julieta Paredes of Mujeres Creando', *Green Anarchy*, (2001), <http://theanarchistlibrary.org/library/julieta-paredes-interview-with-julieta-paredes-of-mujeres-creando>.

⁶⁶ In the sense that Lindquist outlines: Julie Lindquist, 'Time to Grow Them: Practicing Slow Research in a Fast Field', *JAC*, 32: 3/4 (2012), 645–666.

⁶⁷ Many of which we discuss in Sky Croeser and Tim Highfield, 'Mapping Movements—Social Movement Research and Big Data: Critiques and Alternatives', in Greg Elmer, Ganaele Langlois, and Joanna Redden (Eds) *Compromised Data: From Social Media to Big Data* (Bloomsbury Publishing USA, 2015), 173–201.

the postmodern cultural economy (the media, the university, and the arts) and on the other hand with the information industry (the information and communication complex)'.⁴ Terranova argues that the digital economy is:

an important area of experimentation with value and free cultural/affective labor. It is about specific forms of production (web design, multimedia production, digital services, and so on), but it is also about forms of labor that we do not immediately recognize as such: chat, real-life stories, mailing lists, amateur newsletters, and so on.⁵

Overlapping concepts such as the information society, digital economy, and digital society cover a broad swathe of changes which are of interest to anarchist scholars (among others).

There is a substantial body of work on the use of the Internet in activism, including for anarchist and autonomist movements.⁶

The Power of Identity: The Information Age: Economy, Society, and Culture (John Wiley & Sons, 2011).

⁴ Tiziana Terranova, 'Free Labor: Producing Culture for the Digital Economy', in Trebor Scholz (Ed) *Digital Labor: The Internet as Playground and Factory* (Routledge, 2013), 33–58, 35.

⁵ *Ibid.*, 38.

⁶ See, for example, Sky Croeser and Tim Highfield, 'Harbouring Dissent: Greek Independent and Social Media and the Antifascist Movement', *The Fibreculture Journal*, 26 (2015), 136–158; Jeffrey S. Juris, 'Reflections on #Occupy Everywhere: Social Media, Public Space, and Emerging Logics of Aggregation', *American Ethnologist*, 39: 2 (2012), 259–279; Christina Neumayer and Bjarki Valtysson, 'Tweet against Nazis? Twitter, Power, and Networked Publics in Anti-Fascist Protests', *MedieKultur. Journal of Media and Communication Research*, 29, no. 55 (August 19, 2013), 17; Zeynep Tufekci, *Twitter and Tear Gas: The Power and Fragility of Networked Protest* (Yale University Press, 2017); Sasha Costanza-Chock, 'Out of the Shadows, Into the Streets! Transmedia Organizing and the Immigrant Rights Movement', *SSRN Scholarly Paper* (Rochester, NY: Social Science Research Network, October 28, 2014); Paolo Gerbaudo, *Tweets and the Streets: Social Media and Contemporary Activism* (London; New York: Pluto Press, 2012);

Rather than rehashing this work, this chapter explores some of the changes associated with networking technologies particularly as they relate to changes in work, consumption, and alternative economic models. As many anarchist thinkers have argued, including many of the contributors to this volume, work is an important space for anarchist contention: the hierarchy of work under a capitalist system fundamentally undermines our autonomy, capitalism limits the potential for meaningful participation in the decisions that shape our lives, and therefore any anarchist political vision must reconceptualise both production and the social allocation of resources.

In looking at these developments, I take a broad perspective on what constitutes an anarchist approach. Maia Ramnath draws a distinction between what she calls the Circle-A brand of anarchism, and anarchism as a concept, arguing that ‘we could locate the Western anarchist tradition as one contextually specific manifestation among a larger—indeed global—tradition of antiauthoritarian, egalitarian thought/praxis, of a universal human urge (if I dare say such a thing) toward emancipation, which also occurs in many other forms in many other contexts’.⁷ She argues that,

With a small a, the word anarchism implies a set of assumptions and principles, a recurrent tendency or orientation—with the stress on movement in a direction, not a perfection condition—toward more

Leanne Reinke, ‘Utopia in Chiapas? Questioning Disembodied Politics’, in James Goodman (Ed) *Protest and Globalisation* (Annandale, New South Wales: Pluto Press Australia, 2002), pp. 75–90; Dylan Wittkower, ‘The Vital Non-Action of Occupation, Offline and Online’, *International Review of Information Ethics*, 18 (January 1, 2012), 169–174; Eugenia Siapera and Michael Theodosiadis, ‘(Digital) Activism at the Interstices: Anarchist and Self-Organizing Movements in Greece’, *TripleC: Communication, Capitalism & Critique. Open Access Journal for a Global Sustainable Information Society*, 15: 2 (May 29, 2017), 505–523.

⁷ Maia Ramnath, *Decolonizing Anarchism: An Antiauthoritarian History of India’s Liberation Struggle* (AK Press, 2012), 6.

This is not to diminish the value of such projects as a space for anarchist experimentation. The Rolling Jubilee, an outcome of Occupy Wall Street, attempted to jam the US system of on-selling loans to abolish loans, and in doing so to critique and provide an alternative to the existing predatory debt system. In order to do so, it legally incorporated as a US non-profit organisation.⁶² While this project only ran briefly, it not only abolished a significant amount of debt but also envisaged a different economic system, drawing on and highlighting the tradition of jubilee that exists in many religious systems. Turkooption, a project which has run for around a decade, has been specifically described as a project allowing crowd-labour workers to engage in mutual aid. It is not intended to be a solution to the problems of crowdsourced labour, but it nevertheless combines the provision of a meaningful resource for precarious workers with a continual ‘a thorn in the side of crowd-labor celebrants’.⁶³ Whether or not they wholly succeed in their goals, projects such as these use the Internet to facilitate interventions and alternatives to our current economic system, not only providing resources to activists but also embodying less hierarchical models of organising and production. They have the potential to ameliorate workers’ exploitation, build networks of solidarity and mutual aid, and help people to imagine and experience alternatives to capitalism.

Looking to the Margins

In considering the anarchist potentials of networking technologies, we should also look beyond projects and practices which have already received significant attention. Just as bell hooks argues that we should resist the hegemonic strands of white feminist thought

⁶² Rolling Jubilee, ‘FAQ’, Rolling Jubilee, (2013), <http://rollingjubilee.org>.

⁶³ Lilly Irani and M. Six Silberman, ‘From Critical Design to Critical Infrastructure: Lessons from Turkooption’, *Interactions*, 21: 4 (July 2014), 32–35, 34.

has received extensive academic attention.⁵⁹ Much of the writing on Indymedia has, understandably, focused on the ways in which it might provide an alternative to corporate mass media. However, Indymedia also serves as a space where activists can engage in open, consensus-based, organising and production, in which each Indymedia centre remains autonomous. While tensions and problems exist in the manifestation of this model, Pickerill argues that Indymedia collectives nevertheless demonstrate a workable alternative, a tangible space in which the challenges of self-organising can be negotiated and (hopefully) overcome.⁶⁰ There are a range of other projects that similarly aim to both provide online infrastructures for resistance and embody anarchist principles. Riseup, for example, organises ‘on the basis of autonomy, mutual aid, resource sharing, participatory knowledge, social advocacy, anti-oppression work, community creation’, while working to provide secure email for organisations and individuals involved in struggles for liberation.⁶¹ While Riseup and Indymedia are long-running and relatively autonomous projects, many others are much more short-lived and/or intertwined with existing economic systems.

⁵⁹ Jeffrey S. Juris, ‘The New Digital Media and Activists Networking within the Anti-Corporate Globalization Movements’, *Annals of the American Academy of Political and Social Science*, 597 (January 2005), 189–208; Kate Milberry, ‘Reconstructing the Internet: How Social Justice Activists Contest Technical Design in Cyberspace’, *M/C Journal*, 9: 1 (2006), <http://journal.media-culture.org.au/0603/10-milberry.php>; Victor W. Pickard, ‘United yet Autonomous: Indymedia and the Struggle to Sustain a Radical Democratic Network’, *Media, Culture & Society*, 28: 3 (May 1, 2006), 315–336; Sian Sullivan, André Spicer, and Steffen Böhm, ‘Becoming Global (Un)Civil Society: Counter-Hegemonic Struggle and the Indymedia Network’, *Globalizations*, 8: 5 (October 1, 2011), 703–717; Stefania Milan, *Social Movements and Their Technologies: Wiring Social Change* (Palgrave Macmillan, 2013).

⁶⁰ Jenny Pickerill, ‘“Autonomy Online”: Indymedia and Practices of Alter-Globalisation’, *Environment and Planning A*, 39: 11 (November 1, 2007), 2668–2684.

⁶¹ Riseup, ‘About Us—Riseup.Net’ (October 16, 2017), <https://web.archive.org/web/20171016234920/https://riseup.net/en/about-us>.

dispersed and less concentrated power; less top-down hierarchy and more self-determination through bottom-up participation; liberty and equality seen as directly rather than inversely proportional; the nurturance of individuality and diversity within a matrix of interconnectivity, mutuality, and accountability; and an expansive recognition of the various forms that power relations can take, and correspondingly, when it becomes conscious, motivates people to oppose or subvert the structures that generate and sustain inequity, unfreedom, and injustice, and to promote or prefigure the structures that generate and sustain equity, freedom, and justice.⁸

Similarly, James C. Scott argues that ‘anarchist principles are active in the aspirations and political action of people who have never heard of anarchism or anarchist philosophy’.⁹

Much of this collection explores the Circle-A brand of anarchism: a specific theoretical and historical tradition with its roots in largely (but not exclusively) Western movements, its own canon, and its own loosely bounded academic sub-discipline. This chapter takes a different approach because rather than being deeply embedded in anarchist studies as a field, I am an anarchist who has found her way to a particular privileged niche of academia. I am using this niche to explore the tendencies that Ramnath describes above: imperfect movements towards dispersal of power, towards notions of liberty that see it as part of a web of community, and towards attempts to resist and subvert injustice and inequality. My goal in this chapter is not to claim that an anarchist perspective must understand post-industrial and digital society in a certain way, or to

⁸ *Ibid.*, p. 7.

⁹ James C. Scott, *Two Cheers for Anarchism: Six Easy Pieces on Autonomy, Dignity, and Meaningful Work and Play* (New Jersey: Princeton University Press, 2012), xvii.

interpret networking technologies with reference to the anarchist canon, but rather to explore the current possibilities for movement towards the values that underlie anarchism (whether or not they are explicitly identified as such). For this reason, I consider the contributions of anarchist thinkers to include not only those who are published in peer-reviewed journals or news sources, or those recognised as leaders within social movements, but also a multitude of people whose voices find limited audiences, and who are acting within their own webs of community to create networks of mutual aid and visions of alternative political and economic systems.

As Uri Gordon notes, much of the anarchist analysis of technology falls into two broad categories: a ‘Promethean’ view of technology as inherently progressive and liberating, but currently twisted by capitalism into harmful and degrading forms, and a primitivist approach which tends to valorise hunter-gatherer and horticulturalist societies.¹⁰ Gordon draws on Langdon Winner’s work in proposing a more nuanced approach which acknowledges the tendency of certain technologies to facilitate particular uses, as well as recognising the ways in which existing power structures shape the development and success of some technologies over others. Gordon calls for ‘a disillusioned approach to the Internet—employing it as a tool for subversion while remaining aware of its being a temporary anomaly’.¹¹ Most work in Internet studies, my current nominal discipline which I draw on extensively for this chapter, arguably takes this nuanced approach as a starting point (though most Internet studies scholars would argue that the Internet is far from a temporary anomaly), and explores how the Internet is shaped by, and shapes, economic, social, and political power across a variety of areas.

¹⁰ Uri Gordon, ‘Anarchism and the Politics of Technology’, *WorkingUSA*, 12: 3 (September 1, 2009), 489–503.

¹¹ *Ibid.*, p. 501.

change: blackmail, scam, coercion, and monopoly’.⁵⁶ This debacle—which included Ulbricht himself being repeatedly blackmailed, and attempting to have vendors killed by a hitman who turned out to be an undercover agent—demonstrates the limitations of questioning state, but not economic, power.

Of course, many of the problems inherent in these ‘practical anarchies’ are also features of offline anarchist spaces and explicitly anarchist projects, including misogyny, abuse, racism, and invisible power structures in supposedly open or non-hierarchical groups. Morris’ article, ‘Why misogynists make great informants’, traces some of the ways in which the persistent failure of radical movements to deal with internal gender violence, misogyny, and homophobia have facilitated state surveillance and destabilisation.⁵⁷ Movements towards anarchism will necessarily always be partial and iterative; just as we cannot ignore the radical potential of explicitly anarchist projects because they do not fully undo sexism, racism, and other forms of oppression, we should remain open to the anarchist potential embodied in online platforms and tools developed for corporate purposes and/or with libertarian aims. Galis and Neumayer argue that radical activists are engaging in effective *détournement* of corporate social media: other tools are similarly open to processes of *détournement*, reclamation, and subversion.⁵⁸

Of course, there are also a range of networked projects that have been developed more explicitly in line with anarchist principles. Perhaps the most prominent of these is Indymedia, which

⁵⁶ Pace, ‘Exchange’, 6.

⁵⁷ Courtney Desiree Morris, ‘Why Misogynists Make Great Informants’, *Truthout Archive* (May 30, 2010), <http://truth-out.org/archive/component/k2/item/89858:why-misogynists-make-great-informants>.

⁵⁸ Vasilis Galis and Christina Neumayer, ‘Laying Claim to Social Media by Activists: A Cyber-Material *Détournement*’, *Social Media + Society*, 2: 3 (July 1, 2016).

acknowledge, blockchain technology uses tremendous resources, particularly once it becomes popular: one recent estimate is that ‘at a minimum, worldwide Bitcoin mining could power the daily needs of 821,940 average American homes’.⁵¹ This is a significant barrier to seeing this technology as in keeping with a viable anarchist alternative.

The dark web, ‘an amorphous collection of Internet sites that run on darknets, or overlay networks that employ non-standard communication protocols in order to encrypt and anonymize information’,⁵² and particularly the Silk Road marketplace, provides an instructive example of what libertarian dreams of a capitalist market beyond the reach of the state might look like. The founder of the Silk Road, Ross William Ulbricht, envisioned it as ‘a principled libertarian sphere of exchange’.⁵³ Ulbricht aimed to use the design of the site and reference to libertarian ideals (including through his ‘book club’) to ensure accountability and build a community consonant with ‘anarcho-capitalist’ (or rather, libertarian) ideals.⁵⁴ Influenced by these ideals, Ulbricht thought that without the coercive power of the state, actors would ‘come together to form mutually beneficial economic relationships’, creating an economic simulation of a libertarian society.⁵⁵ Jonathan Pace argues that this project ultimately failed both because state power was not actually absent (allowing vendors of illegal materials to blackmail buyers by threatening to reveal identifying details to law enforcement) and because it facilitated ‘the most aggressive elements of capitalist ex-

⁵¹ Christopher Malmo, ‘One Bitcoin Transaction Now Uses as Much Energy as Your House in a Week’, *Motherboard* (November 2, 2017), https://motherboard.vice.com/en_us/article/ywbbpm/bitcoin-mining-electricity-consumption-ethereum-energy-climate-change.

⁵² Jonathan Pace, ‘Exchange Relations on the Dark Web’, *Critical Studies in Media Communication* 34: 1 (January 1, 2017), 1–13, 2.

⁵³ *Ibid.*, 5.

⁵⁴ Rita Zajác, ‘Silk Road: The Market beyond the Reach of the State’, *The Information Society*, 33: 1 (January 1, 2017), 23–34.

⁵⁵ Pace, ‘Exchange’, 5.

Hopes and Dreams for the Internet as a Tool for Change

In the early days of the Internet, there were significant hopes that it would support radical political, economic, and social change. In part, this was linked to the expectation that the decentralised system of the Internet would encourage dispersal of other forms of power. John Duda, for example, suggests that global electronic networks were seen as the basis for new forms of collective intelligence, and the potential for technologically supported models of self-organised societies, as well as allowing networked, democratic production models.¹² Duda argues that several anarchist thinkers, including Colin Ward, were strongly influenced by perspectives that saw cybernetic networks as facilitating decentralised, non-hierarchical organisational forms on a new scale. Other commentators, particularly those involved in early Internet communities, argued that these decentralised, non-hierarchical spaces were already starting to emerge.

Many of these hopes rested on the idea that the decentralised network created a virtual realm that was beyond the power of the state. John Perry Barlow’s ‘Declaration of the Independence of Cyberspace’, perhaps the most widely cited and hyperbolic example of this, claims that ‘Governments of the Industrial World, you weary giants of flesh and steel [...] You are not welcome among us. You have no sovereignty where we gather’.¹³ Subsequent developments, including substantial online censorship and surveillance, mean that few people continue to see the Internet as entirely immune to the coercive power of the state. Even Barlow has since conceded that governments can and do exercise power over the Internet and those who use it, although he maintains that ‘there is

¹² John Duda, ‘Cybernetics, Anarchism and Self-Organisation’, *Anarchist Studies* 21: 1 (2013), 52–72.

¹³ John Perry Barlow, ‘A Declaration of the Independence of Cyberspace’, (1996) <https://homes.eff.org/~barlow/Declaration-Final.html>.

a kind of inexorable direction of the Internet's political influence toward individual liberty'.¹⁴

Perhaps less fully explored than the claims to political autonomy embedded in 'The Declaration of the Independence of Cyberspace' were vaguely articulated sketches of different economic forms. The declaration claims that governments did not 'create the wealth of our marketplaces' and that '[w]e are creating a world that all may enter without privilege or prejudice accorded by [...] economic power'.¹⁵ Of a similar era, 'The Crypto Anarchist Manifesto' also refers to the economic potential of a space free from government regulation:

Just as the technology of printing altered and reduced the power of medieval guilds and the social power structure, so too will cryptologic methods fundamentally alter the nature of corporations and of government interference in economic transactions. Combined with emerging information markets, crypto anarchy will create a liquid market for any and all material which can be put into words and pictures.¹⁶

These libertarian visions of a market free from taxation and state regulation, but in which monetary exchange still plays a significant role, fail to fully acknowledge or grapple with the relationship between the coercive power of the state, private property, and economic inequality.¹⁷

¹⁴ Andy Greenberg, 'It's Been 20 Years since John Perry Barlow Declared Cyberspace Independence', *Wired*, (February 8, 2016), <https://www.wired.com/2016/02/its-been-20-years-since-this-man-declared-cyberspace-independence>.

¹⁵ Barlow, 'Declaration'.

¹⁶ Timothy C. May, 'The Crypto Anarchist Manifesto' (1992), <https://www.activism.net/cypherpunk/crypto-anarchy.html>.

¹⁷ The term 'libertarian' has a complex history, and often overlaps with 'anarchism', particularly in Europe. In this chapter, I use 'libertarian' as distinct from

isation.⁴⁷ Arguably, these suffer from the disregard for attention to structural oppression which characterises the libertarianism underlying US tech culture.

This inattention to structural inequalities will arguably also limit the radical potential of projects which aim to use the Internet to evade state and corporate control of markets. Cryptocurrencies such as Bitcoin and Ethereum are often lauded for their potential to free users from state control, and even to offer the possibility of new forms of decentralised, non-hierarchical organisation. These currencies, as the name suggests, use cryptography and distributed computing (blockchain technology) in order to facilitate secure transactions. There are also projects which aim to use blockchains to create more open and transparent organisational forms. Colony, for example, claims it is 'infrastructure for the future of work', allowing workers to self-organise, choose their own projects, earn fair rewards, and make transparent, non-hierarchical decisions.⁴⁸ Huckle and White, while acknowledging that cryptocurrencies are seen as a libertarian technology, argue that they should also be considered useful for Marxists and anarchists.⁴⁹ Blockchain technology might allow for more distributed forms of governance and for fairer distributions of resources (they also consider more centralised uses of the technology to plan resource distribution along Marxist lines).⁵⁰ However, as even Huckle and White

⁴⁷ Giorel Curran and Morgan Gibson, 'WikiLeaks, Anarchism and Technologies of Dissent', *Antipode*, 45: 2 (March 1, 2013), 294–314. I note that none of the articles which evaluated Wikileaks from an anarchist perspective, including Curran and Gibson 2013 and Benkler 2013, even mentioned the allegations that Assange raped two women. This perhaps speaks to some of the limitations of anarchist analysis, and many anarchist communities, when it comes to taking intra-community abuse seriously.

⁴⁸ 'Colony: A Platform for Open Organizations' (accessed November 3, 2017), <https://colony.io>.

⁴⁹ Steve Huckle and Martin White, 'Socialism and the Blockchain', *Future Internet*, 8: 49 (October 18, 2016).

⁵⁰ *Ibid.*, 9–10.

sources (software) freely available, and, in doing so, potentially stimulates our belief in production without the need for capital or management, and of the possibility of providing for our needs outside of the capitalist economy.

The other examples which Benkler explores—Internet governance, Wikipedia, and Wikileaks—are arguably even more imperfect and partial as practical anarchies than FOSS, particularly when it comes to the possibilities for new ways of collaborating and structuring organisations. The overlapping mechanisms of Internet governance include elements of self-organisation and organisation beyond the state, but even overtly consensus-based decision-making processes are often held at inaccessible locations, are beholden to state or corporate interests,⁴³ or operate through ‘hidden levers’.⁴⁴ Wikipedia not only relies on Jimmy Wales playing the role of ‘benevolent monarch’⁴⁵ but has also been criticised for the ways in which its structures tend to discourage contributions by, and about, women and other marginalised groups.⁴⁶ Wikileaks may have played an important role in leaking information about US warcrimes, but it has also been criticised for the hierarchical internal structure of the organ-

⁴³ Cory Doctorow, ‘An Open Letter to the W3C Director, CEO, Team and Membership’, Electronic Frontier Foundation (September 18, 2017), <https://www.eff.org/deeplinks/2017/09/open-letter-w3c-director-ceo-team-and-membership>; Dmitry Epstein, ‘Manufacturing Internet Policy Language: The Inner Workings of the Discourse Construction at the Internet Governance Forum’, *SSRN Scholarly Paper* (Rochester, NY: Social Science Research Network, September 25, 2011), <http://papers.ssrn.com/abstract=1989674>.

⁴⁴ Laura DeNardis, ‘Hidden Levers of Internet Control’, *Information, Communication & Society*, 15: 5 (June 1, 2012), 720–738.

⁴⁵ Chris Carlsson, *Nowtopia: How Pirate Programmers, Outlaw Bicyclists, and Vacant-Lot Gardeners Are Inventing the Future Today* (Oakland, CA: AK Press, 2008), 209.

⁴⁶ Stine Eckert and Linda Steiner, ‘(Re)Triggering Backlash: Responses to News About Wikipedia’s Gender Gap’, *Journal of Communication Inquiry*, 37: 4 (October 1, 2013), 284–303.

Other hopes for the Internet’s potential to radically change economic relations have explored gift economies or other similar forms. In a 1998 special edition of ‘journal on the Internet’, *First Monday*, several contributions explored non-monetary economies online. Rishab Aier Ghosh argued that ‘There is no question that there are differences between the economic logic—the application of basic economic principles—on and off the Net’ and that ‘there must be a definite possibility of the on-line economic logic spreading beyond the confines of the Net’.¹⁸ Ghosh went on to describe the economy of the Internet as a ‘cooking pot market’, in which the digital cooking pot is ‘a vast cloning machine, dishing out not single morsels but clones of the entire pot’, and which people are happy to contribute what they can ‘as a more-than-fair payment for other goods—“ideas”—that they receive from the cooking-pot’. Richard Barbrook wrote about the emergence of a ‘hi-tech gift economy’, ‘a really existing form of anarcho-communism is being constructed within the Net’ both in conflict and in symbiosis with money/commodity relations.¹⁹ Similarly, Kylie J. Veale argued that voluntary payment schemes are a form of tangible reciprocity that support the continued existence of the online gift economy.²⁰ Optimism about the Internet’s ability to facilitate non-capitalist economic forms continue: Dave Elder-Vass, for example, argues that the digital economy can facilitate economic forms that ‘at

anarchism, to refer to an individualist politics which privileges negative freedoms and capitalist exchange with limited or no regulation.

¹⁸ R. A. Ghosh, ‘Cooking Pot Markets: An Economic Model for the Trade in Free Goods and Services on the Internet’, *First Monday*, Special Issue #3: Internet banking, e-money, and Internet gift economies, (1998/2005), <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1516/1431>.

¹⁹ Richard Barbrook, ‘The Hi-Tech Gift Economy’, Special Issue #3: Internet banking, e-money, and Internet gift economies (1998/2005), <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1517/1432>.

²⁰ Kylie Veale, ‘Internet Gift Economies: Voluntary Payment Schemes as Tangible Reciprocity’, *First Monday*, no. 5 (1998/2005), <http://firstmonday.org/ojs/index.php/fm/article/view/1518>.

their purest [...] deliver economic benefits as gifts and depend on cooperation without authority'.²¹ These contributions see the Internet as a space where non-capitalist economic relations might be revived and reinvented, and where people might have everyday experiences that can bolster non-capitalist economic relations offline.

As a corollary to this, there was tremendous optimism in some circles about the potential for the Internet to change working life. Clay Shirky argued that the Internet and other new networking tools, by lowering the costs of collaboration, opened the possibilities for 'organising without organisations', including reducing (or removing) the need for management, flattening hierarchies, and facilitating the amateurisation of production (particularly cultural production).²² Another related line of argument was that production and consumption were being blurred, with the 'prosumer' playing an increasingly large role in the online economy. Ritzer and Jurgenson argued that this could create a new form of capitalism based on abundance rather than scarcity.²³ While not anarchist in their approaches, these predictions about the Internet's ability to change our working lives demonstrate at least the hope of work that is more meaningful and self-directed, and working environments that are less hierarchical. As John Duda notes, there have also been more explicitly anarchist claims that new technologies will allow the development of:

self-organised networks of producers communicating
directly over the new communicative networks ... to

²¹ Dave Elder-Vass, 'Lifeworld and Systems in the Digital Economy', *European Journal of Social Theory* (May 11, 2017), <https://doi.org/10.1177/1368431017709703>.

²² Clay Shirky, *Here Comes Everybody* (Penguin, 2008).

²³ George Ritzer and Nathan Jurgenson, 'Production, Consumption, Prosumption: The Nature of Capitalism in the Age of the Digital 'Prosumer'', *Journal of Consumer Culture*, 10, no. 1 (March 1, 2010), pp. 13–36, <https://doi.org/10.1177/1469540509354673>.

those involved in developing large corporate platforms like Facebook have frequently valued the libertarian promise of the First Amendment³⁹ while failing to recognise the ways in which structural inequalities undermine this 'freedom'.

Bearing this in mind, we can look briefly at some of the practical anarchies that Benkler discusses, some of which are frequently noted for their anarchist (or at least anti-hierarchical and anti-capitalist) potential. Free and open source software (FOSS)—software which allows anyone to view and change the source code—is, perhaps, the 'practical anarchy' which has received the most discussion. Perceptions of where FOSS fits on the political spectrum vary. Advocates of FOSS differ not only in their own political persuasions but also in whether they see FOSS as having a political, rather than a purely technical, component.⁴⁰ Nevertheless, many participants and commentators join Benkler in the perception of FOSS as an anarchist project. Eben Moglen has referred to FOSS as 'anarchism triumphant', claiming that its success has demonstrated that 'in the network society, anarchism (or more properly, anti-possessive individualism) is a viable political philosophy'.⁴¹ From a more theoretical perspective, Michael Truscello argues that even Eric Raymond's avowedly apolitical approach to open source software possesses 'a subversive political philosophy' which he labels 'tactical poststructuralist anarchism'.⁴² FOSS creates a space for practical anarchy in multiple respects. It provides collaborators with experiences of non-hierarchical (or less hierarchical) production, makes re-

³⁹ Sarah Jeong, *The Internet Of Garbage* (Forbes Media, 2015), http://www.amazon.com.au/gp/product/B011JAV030?redirect=true&ref_=kinw_myk_ro_title.

⁴⁰ For more on this, see Croeser, *Global Justice*, 124 onwards.

⁴¹ Eben Moglen, 'Anarchism Triumphant: Free Software and the Death of Copyright', *First Monday*, 4: 8 (August 2, 1999).

⁴² Michael Truscello, 'The Architecture of Information: Open Source Software and Tactical Poststructuralist Anarchism', *Postmodern Culture*, 13: 3 (2003), <http://pmc.iath.virginia.edu/issue.503/13.3truscello.html>.

context for the development of virtue; or the development of a cooperative human practice, for ourselves and with each other. And fourth, they provide a new way of imagining who we are, and who we can be [...] ³⁴

From this perspective, we might look at specific ways in which the Internet is facilitating experiences of non-hierarchical (or less hierarchical) production and non-capitalist exchange.

Before doing so, it is useful to briefly sketch the politics that underlie many of the projects which Benkler discusses. The Internet hosts an incredibly diverse range of communities and applications, and there is no single ‘politics of the Internet’. Nevertheless, many of the platforms, organisations, and institutions which have shaped the development of the Internet have their root in a shared culture. The Internet is not, after all, placeless but rather has been heavily influenced by its development within a particular time and place: Barbrook and Cameron call this ‘the Californian Ideology’, which they see as based on the US West Coast and ‘promiscuously combines the freewheeling spirit of the hippies and the entrepreneurial zeal of the yuppies’. ³⁵ Tim Jordan argues that this ‘cyberculture’ has been strongly influenced by both libertarianism (in the US sense of the term, which argues for limited state power but an ongoing role for the free market) and anarchism. ³⁶ Key arbiters of Internet culture (such as the long-running and influential publication *Wired*) have been shaped by libertarian principles ³⁷; many of the activists involved in shaping networking technologies are libertarian ³⁸; and

³⁴ Ibid., 215.

³⁵ Richard Barbrook and Andy Cameron, ‘The Californian Ideology’, *Science as Culture*, 6: 1 (January 1, 1996), 44–72, 45.

³⁶ Tim Jordan, ‘Language and Libertarianism: The Politics of Cyberculture and the Culture of Cyberpolitics’, *The Sociological Review*, 49: 1 (2001), 1–17.

³⁷ Ibid.

³⁸ Sky Croeser, *Global Justice and the Politics of Information: The Struggle over Knowledge*, Rethinking Globalizations (Routledge, 2015), 125.

do what they do now, better and more efficiently, free of the interference of the irrational establishment that holds back these forces of networked, democratic production. ²⁴

Unsurprisingly, it seems that many of these hopes for the potential of the Internet to radically change our working lives for the better have failed to come to fruition.

The Internet, Work, and Capitalism

There is a wide range of literature exploring the negative impacts of post-industrial society on the economy and the structure of work. Tiziana Terranova cautions against seeing these impacts as the result of capitalism’s incorporation of, or commodification of, a previously authentic space outside of capitalism, arguing that ‘[e]specially since 1994, the Internet has been always and simultaneously a gift economy *and* an advanced capitalist economy’. ²⁵ Terranova argues that ‘the digital economy is the fastest and most visible zone of production within late capitalist societies’. ²⁶ While acknowledging the radical potential of the Internet, critical Marxist theorists have been particularly useful in analysing its embeddedness in capitalist relations of production, which means that networking technology exists within the wider context of a contested terrain between powerful corporate interests (aided by the state) and system-critical forces. ²⁷ Fuchs argues that we must continue to remain aware of the role of class in analysis of the Internet’s effects, although it has become more variegated and now includes

²⁴ Duda, ‘Cybernetics’ 69.

²⁵ Terranova, ‘Free labor’, 50.

²⁶ Ibid., 46.

²⁷ Christian Fuchs and Marisol Sandoval, ‘The Political Economy of Capitalist and Alternative Social Media’, in Chris Atton (Ed) *The Routledge Companion to Alternative and Community Media*, 165–173; Christian Fuchs, ‘Marx’s Capital in the Information Age’, *Capital & Class*, 41: 1 (February 1, 2017), 51–67.

unpaid interns, online freelancers, unremunerated users of Facebook and Google who create economic value, different forms of knowledge workers, a new young precariat who is attracted to work in the culture industry, Foxconn workers in China who assemble mobile phones and laptops, miners in Africa who extract minerals that form the physical foundation of digital media technologies and who work under slave-like conditions, software engineers who are highly paid and work very long overtime hours and so on.²⁸

The Internet, developing in tandem with capitalism, has had wide-reaching and often negative effects on the environment, and has facilitated workers' (including relatively privileged workers') exploitation under capitalism.

Fuchs argues that critical analysts 'have to see capitalism's manifold dimensions that mutually encroach each other' and incorporate the relationships between information technology and financialisation in their analyses.²⁹ Fuchs argues that Marxist dialectics 'allows us to understand the contradictions of the media in capitalism' and proceeds to identify several such contradictions regarding Internet usage, including contradictions between: users who prefer to access free content online and corporate interests that try to profit from online content by imposing intellectual property rights; users and content creators who depend on their income from this content to make a living; and contending corporate class factions represented by 'the content industry' which profits from commodifying content and 'the openness industry' represented by corporations such as YouTube and Facebook that generate their profit from targeted advertising.³⁰ Fuchs concludes that '[t]he con-

²⁸ Fuchs, 'Marx's Capital', 63.

²⁹ Ibid., 52.

³⁰ Ibid., 62.

tradiction between the openness industry and the content industry shows that the online economy is dialectical: It is full of contradictions'.³¹ In his overview of critical theories of 'the intellectual commons', Broumas summarises arguments around the overriding contradiction that 'informational capitalism' represents: it 'has created the preconditions, on the one hand, for the penetration by the capitalist mode of production of facets of social activity previously untouched by capital'.³² Anarchists may come to different conclusions about the potentials for and methods of resistance, but critical Marxism does provide a useful perspective on the impacts of, and connections between, capitalism and networking technologies.

Anarchist Potentials

Despite the undeniably bleak landscape that we overlook here, viewing the world through an anarchist lens, we might search for the radical potential and practices enabled by networking technologies. Yochai Benkler's work on 'practical anarchies' offers one such approach.³³ Benkler argues that while practical anarchies facilitated by the Internet are necessarily partial and imperfect, they can be useful in several ways:

First, they offer their participants a chunk of life lived in effective, voluntary cooperation with others. Second, they can provide for everyone a degree of freedom in a system otherwise occupied by state- and property-based capabilities [...] Third, they provide a

³¹ Ibid., 62.

³² Antonios Broumas, 'Social Democratic and Critical Theories of the Intellectual Commons: A Critical Analysis', *TripleC: Communication, Capitalism & Critique. Open Access Journal for a Global Sustainable Information Society*, 15: 1 (January 30, 2017), 100–126, 114.

³³ Yochai Benkler, 'Practical Anarchism: Peer Mutualism, Market Power, and the Fallible State', *Politics & Society*, 41: 2 (June 1, 2013), 213–251.