Pity the Poor Engineer

Review of Massimo Ragnedda & Glenn W. Muschert (eds.), *Theorizing Digital Divides*, Abingdon: Routledge, 2018, ISBN 978-1-138-21040-0, and Hamid R. Ekbia & Bonnie A. Nardi, *Heteromation, and Other Stories of Computing and Capitalism*, Cambridge MA: M.I.T. Press, 2017, ISBN 978-0-262-03625-2

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Pity the poor engineer. She wishes to do good, and to employ her technical skills to benefit humankind. She has a sense of what is harmful, and thinks she can give people some tools to ameliorate it. The Internet, together with the digital technologies that enable networks to develop and flourish at scale, looks, to the beneficent-minded engineer, to be a no-brainer – a means to communicate, collaborate, and pursue joint projects, empowering individuals and communities and including the excluded. It lowers the barriers to publication, giving voice to the voiceless and creating new modalities for holding the powerful to account. She accepts that her view is idealised, that harms such as cybercrime and privacy breaches will follow, but they themselves may also be amenable to technical interventions.

These two books, different in tone and intended audience, pour cold water on her optimism. *Theorizing Digital Divides* (TDD) punctures the positive narrative of inclusion, while *Heteromation* (H) problematises the whole idea.

The perils of exclusion

TDD is an edited collection of chapters largely by sociologists (it unaccountably and unforgiveably omits a biographical list of contributors, so that, ironically, only those with access to Google can interrogate their bona fides), exploring the concept of 'digital divide'. Its premise is that, although most of us can see intuitively that access to and effective use of digital technologies are unevenly distributed, work to situate that observation within specific traditions in the social sciences has lagged, and so we lack the resources to explain, understand and close these divides. The authors adopt various theoretical perspectives, including Marxism, Social Construction of Technology (SCOT) theory, and postcolonialism, and press various dead white males, such as Marx, Simmel, Weber and the ubiquitous Gramsci, into service. The book is rounded off by a self-consciously magisterial afterword by Jan van Dijk, one of the

doyens of digital divide studies, in which he rewards his fellow authors with faint praise.

The result, as often with edited collections, is a curate's egg, with splendid contributions sitting alongside inadequate ones. The most convincing speak fairly directly to our intuitions, such as Susan B. Kretchmer on SCOT, Morten Hjelholt and Jannick Schou on classification theory (which oddly doesn't mention James C. Scott), and Eva Klinkisch and Anne Suphan on Honneth and recognition theory. Perhaps the most valuable and eye-opening is Emma Jane's chapter on gendered cyberhate, in which she argues cogently that vile trolling of women online drives them away from the technology, exacerbating the gender divide despite the secure access and strong skills of the women involved – a new and unexpected dynamic.

Not all chapters are useful; the one on psychoanalysis is particularly disappointing. A potentially interesting chapter on perceived digital exclusion of Islamists in Turkey is ruined partly by its structural failure to connect the case study with its nominal framework (Shils' centre/periphery theory), but also by its sometimes incomprehensible English (the proof-reading throughout the volume is not brilliant, perhaps a deliberate decision given the general disapproval of the preponderance of English, but that is no reason not to have edited the frequent repetitions of the chapter on critical geographies). Another chapter is co-written with Marilyn Wallace, a Kuku Nyungkal senior woman from Queensland, whose voice is interesting and impressive to hear, but all too often crowded out by the rebarbative jargon of the classroom and the conference ("To reiterate, the voice of the other made present in complex intersectional representations of digitally productive subjects can be deterritorialized and neo-liberally re-fabricated for repetitive commodification" – TDD, 162). Surely such godawful prose is far more exclusionary than anything developed by Apple or Facebook. After comparing Ms Wallace's cool and clear descriptions of her situation, one is tempted to hold her co-authors responsible for these solecisms.

TDD as a whole covers a lot of ground, and most chapters only begin the process of theorising digital divides. They have an introductory feel, exhorting the possibilities of the chosen methodological framework, rather than exhibiting powerful applications. Empirical work is thin on the ground (TDD, 31, 199, 205). As such, the book is most valuable for the sociologist searching for ways to approach digital phenomena (students and early career researchers), rather than policymakers, opinion formers or our engineer wishing for guidance. All the chapters agree that our understanding has moved on during the century, that the simple question of access has been trumped by a second level of inequality of skills and education, and even a third level of unequal abilities to gain social goods from online activity (TDD, 2). One issue for our engineer here is that, as this view of digital divide has evolved, the prospects of technical interventions have declined. The authors are reluctant to admit it, but the first-level lack of access was more or less sorted by entrepreneurs selling the sorts of technologies for which people were prepared to make economic sacrifices (TDD 25, 117, cf. Crandall et al 2012). The third level of divide is about how technical facility is embedded in social enablers and constraints, over which no-one, least of all the engineer, has a great deal of control.

The breadth of TDD's coverage is a virtue, but the excision of a couple of the less impressive chapters would be a price worth paying if the editors could have included some of the more obvious lacunae. The *ker-ching* of economics is missing – some quantitative methodology of the costs of digital divides, either to excluded

communities or to economies as a whole, would have been handy. There is no mention of cybercrime – does it exacerbate divides, or help even them up (what do Nigerians make of their flourishing phishing industry?)? *Ressentiment* as part of the dynamic might have been an interesting topic of study, especially given the angry tone of some of the contributions. The biggest gap is the failure of any of the chapters to discuss data in any detail – how do data and machine learning affect the distribution of power, or indeed the framing of social problems? How does being the wrong side of a digital divide affect the picture of you that data paints? When serious AI comes on stream, we will need answers to these questions.

The perils of inclusion

Heteromation is a different kettle of fish, and, after reading TDD, comes, if you will pardon the mixed metaphor, as a breath of fresh air. Although its authors mock-seriously apologise for their 'term entrepreneurialism', the neologistic title suggests they are aiming as much at readers of *Wired* as chin-stroking social scientists (exploiting capitalist marketing techniques to reach as wide an audience as possible, one might cheekily enquire?).

Their theory germinates in a simple and original idea – a Marxist analysis of the labour that many perform online for free or for fun, generating data on Facebook, writing blogs and tweets, creating content for games, commenting on purchases and rating hotels, doing Mechanical Turk tasks, writing Wikipedia articles, or making sure that a child or an elderly person interacts with technology 'properly'. This labour creates value, some of which we and our communities enjoy, but much of which goes to the platforms and social networks. Network effects mean that this excess of value is often eye-wateringly high, and fortunes are made from the aggregation of our own micro-efforts. The capitalists try to ensure that more and more of our activity migrates online, increasing their ability to appropriate our labour. The work is sometimes fun and uncoerced (Wikipedia), and sometimes exploitative (much of the gig economy). This makes it hard to regulate – how do we stop the exploitation without stopping the fun stuff too?

The book is beautifully written (it could be read for pleasure), and its innovative analysis should have repercussions across the policy and research spaces, including in the ethics of AI, the regulation of the gig economy, the portability of data, and my own research area of social machines. Whereas TDD is a book for the specialist, I would happily recommend H as an introductory text about the Web to computer scientists, sociologists, economists, philosophers, political scientists and anyone who is just plain interested. Its perspective is almost exclusively US, and it occasionally wanders from the point, with some observations about 1968 that betray the hippyish sensibilities of the authors (not many tech books, fortunately, contain such extensive quotes from Country Joe and the Fish), but it weaves together the history of tech with the history of capitalism to show how capitalism periodically adapts to, and encourages, social change in order to thrive. Ekbia and Nardi are sensitive to the uncoerced nature of heteromated labour, but they are suspicious of the motives of those who exploit it. Heteromation "lacks the brutal, conspicuous mode of acquisition of accumulation by dispossession; in fact, heteromation succeeds by sneaking in on little cat feet, insinuating itself everywhere in computer-mediated networks through nearly imperceptible, dispersed, delicate methods of incitement" (H, 56). They see its attractions (H, 211), but they will not give it the benefit of the doubt. The reason why

people do this free work is obscure (H, 82), until we realise that capitalism impels anxieties and precarity (H, 83).

Together, these two books present our vaguely beneficent engineer with a dilemma. TDD shows that digital technologies are only patchily inclusive. Furthermore, even when one does manage to connect, one's identity is undermined by the preponderance of English, by technology that perpetuates colonialism, by culturally-loaded interfaces, and so on. Even those whose identities survive the perils of networking, H shows, are then exploited by rapacious capitalists. Maybe there is something to be said for being on the wrong side of digital divides after all.

No good options?

A serious issue with the interface of critical theory and engineering is that the former is very good at generating retrospective narratives about how the latter has screwed things up, but very poor at suggesting what the engineer should actually do about it. Neither book transcends this pathology. All the authors agree that technological determinism is a no-no (H, 213), but other forms of determinism slip through the net. Capitalism is always bad (TDD, 75), and will always adapt to any new potentially liberating situation to do more bad things, more sneakily (Ekbia and Nardi do concede that "there is no such reified entity as 'capitalism'" [H, 221], but this is only by way of a belated apology for their treating it precisely as such). Capitalism's 'victims' are usually passive (people were "enticed" to buy houses they could not afford by high-risk, variable interest loans [H, 85]; they have no responsibility), and no author seems to consider the possibility that most people genuinely, authentically and with full awareness prefer the capitalist way of life to any of the alternative utopias on offer.

Meanwhile, resistance is always good, never futile. There are certain thinkers whose word is utterly reliable and who will never lead the seeker after knowledge astray – Gramsci, Foucault, Bourdieu and David Harvey are literally never wrong. Yet these sages only tell us how capitalism fought (successfully, underhandedly) the last war, not what it will do in the next. No distinction is made between, say, Alphabet, Tencent, Huawei and Safaricom, nor any argument given to suggest that they may collectively have a different set of priorities from Exxon or Philip Morris. "Capitalist projects are set in motion so that the rich can discover how much richer they can get, an absurdist endgame of accumulation by dispossession, exploitation, heteromation, and other forms of accumulation" (H, 187). Really? Is it not possible that some capitalists, somewhere, actually think (perhaps incorrectly) that they are doing good, helping people, and spreading prosperity around, and that their customers would prefer that they continued to do so? "Capitalists … make decisions about food, manufacturing, and essential services" (H, 206); yes, in response to the purchases of food, goods and services by the rest of us.

The fact that a billion smartphones are sold every year is taken to mean, not that the capitalist system is uniquely clever and adaptable enough to create and distribute complex technology to the enormous number of people who want it (cf. TDD, 135-136), but rather that their customers have been duped (yet again) into desiring, and paying for, the means of their exploitation. So much for "we won't get fooled again" (from another song quoted in H). But surely the stuff we do doesn't always have such a sinister context. As an example of appropriation of heteromated labour, Ekbia and Nardi point out that owners of robot vacuum cleaners "do significant work to set up the environment so the Roomba could do its job well" (H, 130); no doubt, but

although one also has to tidy a house for a human cleaner, no-one suggests that the cleaner similarly exploits the employer. It's just that it's easier to clean a tidy place. It's no big deal. Aspects of some cultures are better served offline than on (TDD, 94-98), while non-users interact with Internet users in creative ways (TDD, 49, 55, 158), which may explain some (apparent) divides, suggesting that they are not always pernicious.

Moyo, in TDD, blasts "an undemocratic, colonial and exclusive model of the information society produced by a discriminatory Western modernity project" (TDD, 143). It is an absolutely fair point that the large amount of English (and of other languages originating in the colonial powers) is a problem for supporting other cultures online, and that undermining a language is a frightful attack on identity and culture. But given that lots of people speak English and relatively few speak the thousands of minority languages, what do we do? More links will be generated and followed for English sites than ones in, say, Hausa or Tagalog, and this is always going to be the case. This exclusivity is surely an outcome of democracy, not its opposite. Moyo argues that the digital divide may be "a product of a conscious logic of coloniality, marginalization, exclusion, and digital apartheid by the West" (TDD, 143). Conscious? It is surely the unintended consequence of the adoption of technologies at scale, and Westerners are no doubt blind to their cultural assumptions (TDD, 76), but are there really Blofeldian racists sitting in Silicon Valley actively trying to exclude or marginalise, as this seems to suggest?

That is not to say that the Internet is not accelerating the loss of languages, nor that this is not a severe ethical issue. "OK," says our abashed engineer, who means so well, "what should I do to make it all right?" Moyo demands "democratizing [the Internet] beyond its neo-liberal character by confronting its various colonialities [and] re-conceptualizing it as a truly autonomous space for many languages, cultures, identities, and knowledges. … European languages must stand side-by-side with languages from the border. This is already happening with languages like Mandarin in China and Korean/Hangul in Korea. This kind of information society is not top down, divisive, and colonially structured, but truly democratic, decolonized, multicultural and lateral" (TDD, 143, and cf. TDD, 114). But this hardly tells the engineer what to do. The Web already has little top down control of content, and certain languages gain prominence precisely because it is multicultural and lateral – links are made where they are perceived, and there is no central editor to stop them being made, or put them where they 'ought' to be (it would not scale if it had). Mandarin and Korean are numerically important online because there are a lot of Mandarin and Korean speakers using the Internet. Whatever worked for Mandarin isn't going to work for an African language spoken by a smaller community any time soon.

Ekbia and Nardi consciously take on the challenge of answering the engineer's question, drawing on a Gorzian framework where work is traded off for less consumerist lifestyles. "A new cell phone every year is not part of a program of Gorzian simplicity, nor are extravagant levels of international travel, nor driving large vehicles to the grocery store" (H, 189). The problem again is that given the option people seem to want new cell phones and to drive SUVs around. Thomas Piketty is quoted approvingly about the funnelling of wealth into fewer and fewer hands and the consequent need for wealth taxes, without following through the logic that redistributing the wealth of the rich isn't going to wean the middle or working classes off their cell phones and international holidays, whereas allowing a smaller number of people to take a greater slice of the wealth is surely a much better means of curbing

the consumerism of the others. We have quite a lot of unwilling early Gorzian adopters who don't work much and don't lead consumerist lifestyles and don't drive to the grocery store, and they tend to be enormously unhappy because they are unemployed or underemployed; this is usually taken to be a bad thing. Why is it OK when Gorz suggests it? And why will the reality of Gorz's ideal, if it ever comes about, be any more pleasant than a present-day economy in recession? Maybe this is why enthusiasm for Gorz extends no further than the academy.

The overall picture that emerges for our perplexed engineer is a lose-lose. Far from creating the anarchist paradise of Barlow's declaration (1996), digital technologies reproduce or exacerbate offline inequalities (TDD, passim) and conflicts (TDD, 123). Code is a violent, hegemonic language in its own right (TDD, 111, 168). Many classes of people are excluded or otherwise harassed online, and even non-users are affected (TDD, 76). The capitalists who drive many of the Internet's most insidious innovations simultaneously wish to exclude (TDD, passim) and to include (H, 55). Those who are included will have their free labour and leisure appropriated.

Can the Internet be wholly bad? Should we get rid of it? The engineer is a constructive person. She will learn a lot from these two books, especially about how technologies have unintended consequences, particularly when mobilised at scale. They are salutary reminders of Western engineers' (invisible, to them) cultural baggage, and of the perils of solutionism (Morozov 2013). She will read a lot about what is wrong with the present system, and what the ideal may look like. She will not find any road map of how to get from here to there, nor any suggestion that the ideals of the authors might be subject to the same distortions in practice as the ideals of the founders of the current Internet and Web.

As Robert Browning put is, "The common problem, yours, mine, every one's,/Is not to fancy what were fair in life/Provided it could be, – but, finding first/What may be, then find out how to make it fair/Up to our means – a very different thing!" Marx's 11th thesis remains unfulfilled by these two books; there is a whole lot of interpreting the world in there, and not so very much on how to change it.

References

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