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Work-in-Progress

POWER AND DIGITAL TECHNOLOGIES: A TRANSDISCIPLINARY DISCOURSE

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Abstract: We grapple with the grand challenge of increasingly mutating and rhizomic ICTs systems as forms of 'power container of modernity' (Giddens) or power-knowledge (Foucault) that can both enable and constrain our ways of thinking and acting in the world.

This paper reflects a transdisciplinary conversation between researchers coming out of very different disciplinary paradigms - an engineer, a data scientist, a philosopher and two journeyman-sociologists and historians with action orientations. Can we develop a common language or metaphors? Or in fact, is the problem one that is continual because digital technologies and their effects continue to evolve and impact in as things in themselves as agents in the world and even reaching comment understandings is a Sisyphean task?

Each of us has written a position statement with ripostes and rejoinders from the others. We have everything in common as humans, but in some ways, our intellectual orientations and limitations fragment us. We ask each other: 'What are our intellectual and practical concerns?' What can do we bring them together to influence what we think is important?

Keywords: Transdisciplinarity, power, knowledge, interdisciplinary, ICT, socio-technical systems

Introduction

This paper tenders a diverse set of discourses prompted by an acknowledgement that we, as ICT affiliated disciplinarians have lost sight of each other in a dynamic intellectual climate where issues of power, technology, knowledge and agency are being argued, though not necessarily heard. In this paper, we, a group of five scholars, ask each other what our concerns about technology are. As we continue to debate the points of struggle against the ongoing penetration of technology and subsequent modes of acting, we realise we that our understanding of, and ability to control technology is quickly escaping our disciplinary researchers. We aim to start this conversation, not in an interdisciplinary workshop or steering committee, but in an article where our influence on each other's position is brought about by our domain expertise, ability to communicate and commitment to inclusivity.

In motivating this exercise, we question how we have gotten here today, siloed conversations and research orientations that are potentially in opposition to one another. We recognise that one factor that may be subverting our efforts to tackle these complex problems is that we as scholarly researchers are crafting our arguments to be considered by our extra-disciplinary colleagues, not an invitation to our extra-disciplinary colleagues to enter a dialogue, but rather an emphatic and exclusive diatribe. Critically-

orientated researchers have long since participated in multi-disciplinary conversations about the ethical, cultural and social implications of technology. Indeed, in recent years, sub-disciplines have developed which consider data justice, digital politics, ethical algorithms, dataveillance, algorithmic sovereignty and data privacy (Michael & Lupton, 2017). Similarly, computer sciences and engineering have diversified to including machine learning (ML), blockchain and immersive analytics, and autonomous robots. It is the commodification of these disciplinary outputs that, for the most part, drives the rapid technological advancements we consider here in terms of their social impact.

This organisational paradox is perplexing for an academy that proclaims a history of interdisciplinary collaborations. Interdisciplinary approaches see researchers work together to solve complex real-world problems through a collaborative analysis where disciplinary methods are transferred to others for new applications of analysis. While this approach emerges new synergies from this transfer of knowledge, the intent is to solve a problem, not to gain an understanding of the world in which that problem is contextualised (McGregor 2004). Perhaps, the nature of interdisciplinary research, cannot handle the complexity of contemporary socio-technical problems we seek to address. These projects do not transcend our ways of thinking about the social, or the technical, in a way that permeates our disciplines. Thus, the conversational gap is left open to continue to widen.

What we require is a transdisciplinary approach. This is where we, as researchers, conduct a dialogue to share our assumptions and methods to form a new way forward in to tackle such complex issues (Lattanzi 1998). Such an approach would see us move away from simply distributing our different analyses and application, 'to creating a space for shared dialogue, leading to joint analysis using new approaches that could not have existed without the crisscrossing of ideas to weave together a new web of knowledge' (McGregor 2004, p. 2). We should note, that we are not advocating for the demolishment of disciplinary boundaries, but to transcend disciplinary boundaries when appropriate. To achieve this, we must first have an openness to Transdisciplinarity.

The process aims to open up avenues for collective thinking, reflexivity and mutual learning opportunities between researchers so that new questions can be asked, and knowledge can be formed in a contextualised manner, accepting that a common research objective which is motivated by the societal and scientific triggers generated from existing societal and scientific problems. As such, we attempt first to understand what it is that we are motivated to reach out to one another to ask: 'What are our intellectual and practical concerns?' What can do we bring them together to influence what we think is important? These questions we ask to ‘dig deeper into dialogue and perspective sharing rather than first stop at the first satisfactory explanation of a problem’ (McGregor 2014, p.6).

Today's entangled structures of knowledge, power, technology and agency are eliciting an entirely new generation of wicked problems which, as our paper explores, are a result of not just how power now flows in our datafied information society, but more generally, how we think and are affected by these powers. This paper draws upon our experiences as researchers to begin to understand how each of us perceives this state. In essence, this conversation is an effort to elicit the transdisciplinary problematization of the ever-evolving set of challenges, both technical and societal, brought about by advancing technologies. However, we must first determine what these challenges are.

Work-in-Progress

Fully Sick Dystopia

Larry Stillman

This paper takes a dystopic approach to the question of power (the theme of the conference) in relation to digital technologies and their effects. In this respect, my remarks are very traditional and follow a tradition of leftist thought inspired by Marx in his Economic and Philosophic Manuscripts of 1844 and members of the Frankfurt School (Jay 1973). In fact, I am surprised how easy it has been to frame the problem without descending into silo-driven academic obscurity with its arcane language, buried deep in contemporary electronic search engines. Old-fashioned yellowing books and their old concepts have been mostly sufficient in this endeavour.

What do I mean by the administration of power in and through digital technologies, a theme of the conference? Following Marcuse (Marcuse 1968) and others, I see power as a structurally pervasive and soft influence on how influencing how people think and behave through the development of what is called false consciousness, commodity fetishism, or reification (Lukács 1971), and the corresponding the culture of narcissism (Lasch 1978). These cover up for surveillance, control and manipulation of data under the capitalist mode of production. These latter factors serve to separate individuals from a putative, liberated self, free of paralysing social and psychological control. In strictly Marxist terms not only are we alienated from control of the means of production, but it is also alienated from our 'species essence' 'species being' or Gattungswesen (Marx 1964, p. 112) In contrast, a less critical view of socialisation is very standard in sociology, found in the work of Durkheim and Weber and subsequent functionalist thinkers who provide a more positive view of socialisation in capitalist society (Berger & Luckmann 1966; Giddens 1968; Giddens 1971).

For Marxists, Zuboff's characterization of surveillance capitalism, as just a 'a rogue force driven by novel economic imperatives that disregard social norms and nullify the elemental rights' is deeply erroneous (Zuboff 2018, p.18). In fact, the surveillance capitalism that underpins it is not rogue but is integral to the immaterial innovation of contemporary capitalist project aligned with more social control and division soft hegemonizing and legitimizing structures (Poulantzas 1969) that have replaced brute violence in the west and (Bellamy & McChesney 2014).

In fact, we see the hard underbelly of soft electronic power which exists today in developed countries (and in the affluent strata in other countries): data for profit, forces for repression, suppression, extremism, cybercrime. This is all notwithstanding the enormous benefits that can also accrue via innumerable physical and virtual technologies (for example, the application of robotics and AI in health systems, or the simplicities of personal navigation via Google maps). Most of the world does not benefit, and in fact, third world factories with their slave-like conditions producing chips and devices for our benefit are a direct continuation of the crude factory conditions of the 19th century.

Consequently, from the perspective of a person working within the Information Technology discipline, albeit on a far-left wing, I take the view that referencing classical critical sociology is necessary for any transdisciplinary efforts to construct a pathway out of this dystopia, and we need to go back to basics in thinking about the meaning and purpose of technology. This is because these (white male) thinkers offered grand visions of social problems and forces that went across disciplinary boundaries

before the emergence of the industrial model of academic work that has resulted in an unhealthy division of critique from technique. Sadly, there now appears to be little interest in dealing with larger social questions about the meaning of technology. Even in the Critical Theory wing of IS thinking, there is little direct referencing of the Marxist framework, even though so many of its insights are clearly derivative at a hop-and-a-step. More open political critique of the capitalist mode of production is largely absent, though it is on the way, but expressed in a tight disciplinary mode (Cecez-Kecmanovic & Kennan 2013).

There exists an increasingly monopolistic and homogenous digital system of social-technological control dominated by large-scale players and a corresponding orientation in academia. This contrasts with the originally artisanal and communal ethos of the internet. Today, the system includes the emergence of large-scale panoptical systems of social control, such as found in China where online technology has been embraced wholeheartedly as part of the drive to so-called modernisation, in the spirit of repressive intolerance. This is in contracts to the more open but ultimately manipulative tolerance found in the west. Remember too, that the Chinese model, with its system of facial recognition, fingerprints, firewalls, and surveillance is one that is adopted to an increasing degree in Western liberal democracies as well, as part of the justification for increased state power in the fight against international terrorism or perceived social deviation. Foucault's views on the nexus between power and knowledge equally apply in this context (Foucault & Gordon 1980).

In this regard, Habermas' short essays from the 1960s, which appeared in English in 1972, still sparkle with their incisiveness (Habermas 1972). They are also clearly influenced by Marcuse, whom he cites extensively in one of the essays. Habermas makes the point that there has been a separation of the practice of science (which obviously includes the development of technology) from the philosophy of science (the big questions). But at the same time, this has resulted in the suppression of critical social-consciousness in the technical areas, and the focus on what he calls seemingly autonomous objectified processes, such as the design of systems devoid of political interests or questions (p.55). He writes, condemning the academy and others, that this separation is fallacious and 'serves in the end merely to conceal pre-existing, unreflected social interests and prescientific decisions' (p.59).

Advanced technological society— and since Marcuse's time we have entered into the age of the internet— is consequently a 'political universe, the latest stage in the realisation of a specific historical project - namely, the experience, transformation, and organisation of nature as the mere stuff of domination' (Marcuse 1968, p. 14). We should also qualify the concept of an advanced technological society. In this case, digital technologies, due to their virtually, can be imposed upon a physical entity at low cost, providing mass entry (for example, the mobile phone). Today, this also includes societies that are considered to be relatively undeveloped. Thus, the whole planet (and now beyond) is involved in this transformative project (Fuchs 2018).

The cultural aspects of this and their mediation via technology should not be underestimated as a reflection of power. As Kirsner observed many years ago, systems of domination consist of technical, social, institutional, and instinctual spheres (Playford & Kirsner 1972, p. 25). In the past, the instinctual sphere was seen to be affected via the culture of mass consumption and diversion as a fashion, the popular media, music or sport through the power of advertising.

Today, however, people seem to accept their role as instant consumers willingly, creators (or influencers) and servants of the seemingly wonderful virtual

system which plunders their data and autonomy. In the 1860's, Marx, albeit briefly, spoke of the fantastic form of the fetishism of commodities (Marx 1976, p.165), in which people ascribe all sorts of values to things far beyond the actual physical cost of production (a simple example is the cultural and financial extraordinary value attached to some works of art). Half a century ago, Marcuse also suggested that to stay sane there is 'the need for modes of relaxation which soothe and prolong this stupefaction; the need for maintaining such deceptive liberties as free competition at administered prices, a free press which censors itself, free choice between brands and gadgets' (1964 p.7). And, as Haraway wrote in 1985, we now live with 'constructions of natural-technical objects of knowledge in which the difference between machine and organism is thoroughly blurred; mind, body, and tool are on very intimate terms' (p. 303). But as well, today, we can see that diversion includes the emerges of means of engaging in sophisticated anti-social (online bullying, harassment, doxing in a myriad of ways, as well as criminal activity, all made available through various platforms as well as the dark web.

More specifically, what is the character of the blurred-machine organic relationship that manipulates or is used to manipulate instincts in a monopolised system that is simultaneously stupefacient and exploitative? Simmel's 19th century observations of the effects of urbanisation, cosmopolitanism and the emergence of transactional, market-driven and often depersonalised relationships (2002) have been taken up by a number of writers. From Baumann, 'Flexibility has replaced solidity as the ideal condition to be pursued of things and affairs' (2000, p. ix), and Giddens, who emphasised the disembedding effects of modernity upon traditional mores, practices and particularly, modes of communication (Giddens 1990; Gidden 2000). Time and space have been collapsed and reconfigured through digital technologies. However, 'the transmission speed of communication does not improve the value of what people communicate. On the contrary, mediated communication lowers the quality of the communicative performance, as far as to deprive it of the support afforded by non-verbal language, proxemics, kinesics, etc.' (Fortunati 2002, p. 516). In fact, with a reduced sense of the other and multiple and partial identities, there is a potential for behavioural distortion such as that which plays out in exhibitionism and depersonalised political extremism. A recent publication suggests that Trump is the highpoint of this digital distortion of self: 'That there is no history and no objective truth beyond your immediate situational interests, and that reality resets with every tweet or click of the remote' (Poniewoziek 2019).

What is to be done? There is no easy answer. I do not suggest turning off the internet (though some regimes do this when threatened). Google, Facebook and others cannot govern themselves as either technical innovators or content providers and platforms, and governments are all over the place about what to do, depending on their ideological thrust. From the academic perspective, one (long-term) solution is to change the quality of research, development, education and to push for the incorporation of ethical and moral reasoning in technological faculties and a lot of noise in the public sphere on moral and ethical issues. We need to remember that it is only a quarter of a century since the first versions of Netscape became available and we had no premonition of what would be in a very open and fluid situation. Now that we know, there is an opportunity to educate a new generation coming through the system to think far more morally and ethically about their Brave New World. Twenty-five years of good agitation by those coming into the academy could make quite a difference to those who end up inventing the next generation(s) of e-monsters.

Work-in-Progress

A Few Thoughts on Three Recent Books

Steve Wright

After a number of false starts, I've decided to try once again to address the question posed of the relationship between power and technology. This time the idea is to approach this by discussing some of the central themes in three books that have made a certain impression on me. One, by Lizzie O'Shea, addresses the question of power and ICT in a wide-ranging social context; another, by Nick Dyer-Witheford, Atle Mikkola Kjøsen and James Steinhoff, examines Artificial Intelligence in terms of the relationship between capital and labour; the last, by Jason Moore and Raj Patel, look at today's ecological crisis through the prism of world systems theory. As a set of texts, they have the advantage of being quite readable, as well as considering questions around power (and, usually, technology) on different scales and timeframes. And they are quite topical, with the first two having appeared in print only in the last few months.

A History of the World in Seven Cheap Things: A Guide to Capitalism, Nature and the Future of the Planet

The first of these, *A History of the World in Seven Cheap Things: A Guide to Capitalism, Nature, and the Future of the Planet* (Moore & Patel 2017) has a much wider sweep than the rest. Patel and Moore are as emphatic as the other authors discussed here that power and technology cannot be looked at separately from the question of capitalism, which they characterise 'not just as an economic system but as a way of organising the relations between humans and the rest of nature' (p.3). In an amusing introductory discussion, they suggest that 'the most iconic symbol of the modern era isn't the automobile or the smartphone but the Chicken McNugget' (p.5). Chicken has become a staple of the modern Western diet (*cheap food*), underpinned by the fast food industry (*cheap work*), which in turn relies on natural gas (*cheap energy*). It is above all at the frontiers of a global society that many of these cheap resources come to be marshalled, beginning with efforts 'to turn nature into something productive and to transform that productivity into wealth' (p.46). One of Patel and Moore's central arguments is that the notion of *Nature* as something external and counterposed to *Society* is itself a social construct. More than this, both Nature and Society exist today as *real abstractions*, in the same way that *Money*, *Capital*, and *the Market* exist as social forces with agency through which members of society are obliged to relate to each other. *A History of the World in Seven Cheap Things* emphasises the extent to which, over the past five hundred years, development has in large part been predicated upon the externality of costs – or in the words of one of the founders of the world systems approach, 'An essential element in the accumulation of capital is for capitalists, especially large capitalists, not to pay their bills' (Wallerstein 1997, p.4). From this perspective, today the biggest problem facing accumulation – that is, the process of turning money into commodities so as to obtain still more money through their sale – is that the *cheap* options of the past are becoming more and more difficult to find and harness. Increasingly, Patel and Moore conclude, 'Keeping things cheap is expensive', especially when outlays for maintaining social peace are added to the equation (p.182).

A History of the World in Seven Cheap Things is a book above all about power relations. On the face of it, however, there is little said about technologies, except to the

extent that the latter has been designed as means of development and social control. More to the point, almost nothing is said in the book about ICT as such, unless one understands ICT in a very wide sense as technologies of mass communication that encompass not only computers and the Internet, but also print media. Instead, Patel and Moore's work is a counter-intuitive attempt to provide a reading of the global social setting within and through which the reasons and rationales of current technologies – including but not reduced to ICT – might be understood. In arguing for a frame of reference that they call *world-ecology*, the authors of *A History of the World in Seven Cheap Things* seek to make the case that the current global 'unequal arrangements – even those that appear timeless and necessary today – are contingent and in the midst of an unprecedented crisis' (p.38).

Future Histories: What Ada Lovelace, Tom Paine, and the Paris Commune Can Teach Us about Digital Technology

Lizzie O'Shea's *Future Histories* (2019) is *broad* in a different kind of way, flitting across a range of topics and interests. It is also written in a manner that is more accessible to a general audience than the others. This is not to say that the other two books are badly written, let alone impenetrable for readers without specialist knowledge. Far from it – indeed, the prose of the third book, in particular, is elegantly crafted, as one familiar with Dyer-Witheford's earlier work has come to expect. It is too early to judge the market penetration of *Inhuman Power*, which has only just appeared, and *A History of the World in Seven Cheap Things* has clearly made an inroad beyond academic circles and into *quality* bookshops in the couple of years since it was published. All the same, I have no doubt that of the three, *Future Histories* – which also has just been released – is the most likely to succeed in terms of commercial success and reach. Prominent in the recent campaign opposing the Australian federal government's encryption bill (*The Assistance and Access Act* 2018 [Cth]), in June 2019 O'Shea was presented with a 'Human Rights Heroes Award' by the UN High Commissioner for Human Rights. Subtitled *What Ada Lovelace, Tom Paine, and the Paris Commune Can Teach Us about Digital Technology*, O'Shea's book is wide-ranging, even eclectic, while remaining an engaging and even *easy* read. In a bravura performance, *Future Histories*' dozen chapters cover a lot of ground in examining ICT as a means for power: from online surveillance, the consequences of bias in design, the production of open source software, the labour market implications of new technology, and the question of who owns (and who should own) the output of digital labour. Her central argument is neatly summarized in the first chapter, where – having described the beauty of a 16th century automaton of a friar in prayer – it is asserted that:

> [C]oncealed in many beautiful objects that we see and handle every day is the brutal labor history of places such as Shenzen that testifies to the power of the process of commodification. Having replaced artisanal automatons with mass-produced robots, we start to treat others and feel like robots ourselves. Our current society reveres some kinds of labor and debases others, and the power of technology to improve our world and livelihood is not equally distributed. (O'Shea 2019, p.5).

Part of the appeal in O'Shea's writing lies in the sometimes surprising associations she makes: between Lovelace's work with Babbage, and the broader

question of software development as a labour process; between Paine's rabble-rousing career as a pamphleteer, and how the social media of today might facilitate and/or obstruct participation in public debate; between the practical experience of the Paris Commune one hundred and fifty years ago, and the contemporary possibilities of overcoming 'social problems … by empowering people to make decisions collectively' (p.114). For those familiar with this subject matter, perhaps there will be nothing novel in all this, but the suspicion remains that *Future Histories* will be read quite widely (clues on that front include not only an audio version of the text available on Amazon, but a pirated digital version of the book having already been uploaded to a widely used online site for such material).

Inhuman Power: Artificial Intelligence and the Future of Capitalism

With *Inhuman Power: Artificial Intelligence and the Future of Capitalism*, Dyer-Witheford, Kjøsen and Steinhoff provide the most formally Marxist approach amongst these three books to the relationship between power and technology, even if what is advanced is very much a heterodox Marxist approach (2019). The *inhuman power* of the title takes its cue from one of Marx's earliest accounts of capital as a social relation, through which human capacities are turned against, and reign over, the human beings from which they spring forth. As a rumination on AI, the book is divided between an initial survey of what narrow or weak AI means in practice today, what general or strong AI might mean for society and radical politics were it ever to be achieved, and – sandwiched in between – a reflection on some conceptual tools (class composition, social factory) that might be useful in making sense of all this. While the last part of the book is fascinating as both speculation and as a critique of Marx's own conceptualisation of machines and of value, it is the first third, with its attempt to locate machine learning as a moment of workplace and societal restructuring, that is of most immediate interest. In challenging not only the accelerationist arguments propagated by the likes of Aaron Bastani but also the views of those who assert that nothing of substance has changed with the application machine learning to industry, *Inhuman Power* is part of an ongoing debate in left-wing circles around contemporary possibilities for radical social change. Finally, in what is undoubtedly one of the more novel aspects of their book, Dyer-Witheford, Kjøsen and Steinhoff happily delve into the genre fiction written by Iain Banks and others, which has portrayed a range of scenarios where AI might become a social reality.

A key starting point of *Inhuman Power* is the definition of a machine presented by Marx in Capital Volume 1. If the origins of machinery from this perspective lie in what Dyer-Witheford, Kjøsen and Steinhoff call the *genealogy of tools*, nonetheless the widespread use of machinery is seen as a fundamental leap forward in industrial development:

> The machine, which is the starting-point of the industrial revolution, replaces the worker, who handles a single tool, by a mechanism operating with a number of similar tools and set in motion by a single motive power, whatever the form of that power. (Marx 1990, p.497).

For Marx, the labour-saving capabilities of machines in the workplace are deployed primarily not to reduce the burden of the employee, but rather to reduce labour

costs. More than this, machinery is interpreted as a means of consolidating the power relationship between labour and capital in favour of the latter:

It would be possible to write a whole history of the inventions made since 1830 for the sole purpose of providing capital with weapons against working-class revolt (Marx 1990, p.563).

Dyer-Witheford, Kjøsen and Steinhoff spend a lot of time in their book exploring how machine learning is used as a means to supplant humans within the production process (as an aside, they also address the ways in which human input continues to remain indispensable to machine learning – what has been labelled by others as *the paradox of automation's last mile*). One of their most important points, which resonates with the other two books, is the stress they place upon viewing all this from a world systems perspective. Following George Caffentzis (who has offered his own critique of Marx's discussion of machines, although that part of his work is not addressed in *Inhuman Power*), they insist upon the causal link between the replacement of humans by AI within the so-called advanced sectors of the world economy, and 'the expansion of the service sector and global sweatshops' elsewhere (p.24). In this respect, they also echo certain of the views presented by Patel and Moore, intimating that much of the drive for AI may be 'induced not only by technological breakthroughs, but by increasing frustration in finding cheap labour' (Dyer-Witheford, Kjøsen & Steinhoff 2019, p.24).

Reflections

Power can be an ambiguous term, at least in English. Italian, instead, makes a distinction between two kinds of power – the power to do something, and power over something (or someone). Italian also distinguishes between *potenza*, which is latent (the ability to do something), and *potere*, which is the actual exercise of power. Does this then help explain why in English it is sometimes more common to think of power as a force or as a thing, rather than (also, often) a relationship?

More immediately, what is the nexus between power and technology in each of these books? All talk about power both as a relationship (power over others) and as a *thing* that facilitates action (power to do), but only Dyer-Witheford, Kjøsen and Steinhoff explicitly examine the connection between power relationships and power-*things*. For Patel and Moore, as mentioned before, there is little overt examination of technology as such, while there is often discussion of technology's use in practice (above all if we understand technology itself less as a *thing*, and rather, in its original meaning, as the practical application of science and knowledge). O'Shea also writes a lot in passing about power relationships and the power bound up with technology (and choices made in its development and application), but she is probably most explicit about the topic in her afore-mentioned acceptance speech:

Technological advancement is not just about intelligent design, clever cryptography or brilliant coding; it's also a function of power. To make technology work for people, we need to take this power back – and demand that the development of technology involves social, political and ethical considerations. Just because technology does certain things now, doesn't mean it couldn't do them better. And just

because technology gives us the power to do something does not mean that we should. These tensions are not simply technological; they are political (O'Shea 2018).

And that is probably as good a place as any to stop for now …

Communities of knowing: Islands in the (data) streams

Mark Howard

Every speaking subject is the poet of himself [sic] and of things. Perversion is produced when the poem is given as something other than a poem, when it wants to be imposed as truth, when it wants to force action. (Rancière 1991, p.84)

– Jacques Rancière, The Ignorant Schoolmaster

When our stated aim is a transdisciplinary conversation about technology, power and knowledge I think immediately of Jacques Rancière, and in particular his remark: 'you cannot understand anything ... if you enclose yourself in the field of one discipline. A discipline is always the *anticipated implementation* of a decision about the relation of thought and life, about the way thought is shared.' (Blechman, Chari & Hasan 2005, p.300). A discipline or discourse is, before everything else, Rancière claims, the erection of a territory and the objects that belong to it. Its methods are the *weapons* that institute and maintain the boundary (Rancière 2006), while the assumptions in play in disciplinary thought are used in a strategic fashion to disqualify certain agents and aggrandise others. Such distinctions, Rancière argues, accord with the fundamental prejudice that partitions society into *two humanities*: those who know and those who do not. This legitimises the dominance of certain classes – the active over the passive, intelligent over sensuous, and the educated senses over the raw/unrefined senses (Rancière 2009a; Rancière 2009b). The sovereignty declared over knowledge by disciplinary thought is common to knowledge practices within society and is a source of control over thinking and acting in the world—power.

While it is commonly proclaimed, and often without critical reflection, that knowledge is power, a contrary view is that it is not knowledge, but the *control* of knowledge, that is power. For those of us interested in political philosophy, the second iteration of the relation of knowledge and power is adeptly represented by Bruce Sterling, who avers that 'knowledge is just knowledge. But the control of knowledge—that is politics.' (2011, p.299.) Alongside the assertion of Rancière, this statement intimately links knowledge and power in a social relation of command—*politics*. While the declaration that knowledge is power is seemingly a claim of equivalence, Sterling's assertion is a claim about power asymmetries and authority structures, a claim that fundamentally understands epistemology as social, and as such potentially unjust. This concern is pressing in the *info-glut* era, where ICT provides access to a multitude of conflicting truth claims but also consists of platforms that wish to regulate and order the flow of information (Andrejevic 2013). Consequently, the ability to assess the credibility and reliability of sources of knowledge is critical.

As agents in the world, we must continually choose between competing sources of knowledge, selecting what we believe to be credible and reliable. The social processes, institutions and procedures, and interpersonal influences common to our

situation shape how we perform this task. This *epistemic system* promotes and validates sources of knowledge, often based on properties such as the social location and identity of the speaker or the interpreter (Andrejevic 2013; Goldman 2001). As such, discrimination between competing sources of knowledge is influenced by existing social norms of rational authority (Fricker 2011) and reflect existing social hierarchies. When experienced as an impediment to agency, epistemic systems may preclude certain communities from the analysis of their own social and political condition. The effect this has is to insulate intellectual spaces from particular epistemic contests, creating *in* and *out* groups. This spotlights how our attention may be resistant to intervention by *outgroups*, a situation observable in the recent phenomenon of *echo chambers* and targeted news feeds associated with social media. Social media platforms appear intent on bringing knowledge to and from the people, adopting the stance of expert, or intellectual, expropriating the public of its knowledge. This is contra the approach of French thinkers of May 1968, including Rancière, who suggest what is important is exposing why certain 'knowledges' appear while others do not.

Knowledge, by the account I offer, is a product of a social relation, and crucially, involves a relation of command (power). The control of knowledge is political and affords the capacity to enable, constrain, or direct thinking and acting within the world. As Rancière aims to reveal, conventions of meaning and significance that organise our experience of the world are a prerequisite of community, and this 'regime of the sensible' is what makes possible, while it also limits, our agency (Rancière 2006, pp.1-2; Rancière 2009b). Community membership accordingly requires, as Caroline Pelletier recognises, 'adopting its ways of knowing … [and] new members are initiated over time.' (Rancière 2012, p.109). This relation of knowledge and power brings new meaning to the concept of the 'online community', and the place of ICT in society.

It is uncontroversial that digital technology (ICT), especially social media, is an important influencer and has become a source of secondary socialisation changing behaviours and attitudes of users, sometimes by design. As Fogg asserts, today computers [ICT] are taking on a variety of roles as persuaders, including roles of influence that traditionally were filled by teachers…, therapists, and doctors…among others. 'We have entered an era of persuasive technology, of interactive computing systems designed to change people's attitudes and behaviours.' (Fogg 2003, p.1)

As such, ICT systems have implications for social relations. While it can be argued that these systems can be designed to empower individuals and level hierarchies, what we tend to see instead is political power further concentrated by ICT platforms working as gate-keepers to social and political participation (Holt, Lang & Sutton, 2017). Further, as big data becomes increasingly necessary for the development and deployment of ICT, we must acknowledge, as Richards and King identify, that 'big data has power effects of its own, which privilege large government and corporate entities at the expense of ordinary individuals.' (2013, p.42). The leveraging of big data, at a minimum, raises issues of data ownership, data privacy, and surveillance, and an extension of these concerns is the potential for corporations and political institutions to monopolise access to data, effectively segregating it from the communities within which it is generated. This will be an efficient means to control knowledge.

Potentially, the ubiquitous spread of ICT, and a key enabler big data, will impact our relations with, and attitude toward, the world (natural, social, political) as it distorts and flattens our vision. Increasingly we may come to encounter and understand our situation through the lens of data: data is all. But we are not merely *rational actors*, and our world is not simply curtains of data. The fantasy of academic positivism, the

purported objective or disinterested view from above that so long bewitched the social sciences, has seemingly captivated the computer sciences which now adopt a similar language of objectivity. Big data has taken the place of instrumental rationality, where, to recall Marcuse, speaks 'the mutilated, *abstract* individual who experiences only that which is given to him, who has only the facts and not the factors, whose behaviour is one-dimensional and manipulated.' (Marcuse 1968, p.182). Marcuse here is damning of the positivist social sciences, with their *positivist mentality* reducing humanity to the *one dimension* of instrumental rationality. He could well be speaking of ICT systems and the burgeoning field of big data, *machine learning* and artificial intelligence. Approaching the world as data, as a system to be analysed and manipulated, could have negative outcomes for us intellectually, socially and politically; it is also likely to be bad for that world and a majority of its inhabitants. When it is our relation to other persons and knowledge of their situation that we obscure behind streams of data this seems particularly problematic, insofar as the real-world exploitation, bias, oppression, injustice and similar might be veiled, first by the data that is collected and, second by the very act of representing it as data.

The position occupied by ICT in society shapes our social ecology, enabling and constraining social participation, increasingly mediating citizenry, and is becoming fundamental to many important forms of participation, particularly social, political, epistemic and economical. While many of the ICT platforms present themselves as liberating and empowering, they remain hierarchical top-down systems that do not represent the ideal of the *people's assembly*, a public space for the exchange of ideas. While the ideal of the assembly, or *the common*, is volatile and a challenge to existing social structures, social knowledge aims to organise society by establishing a material order that stabilises our experiences and limits our thinking and acting in the world. It is the latter that is the ideal of ICT, which is inherently reductive as it attempts to automate thought by taking the complexity of human action and thinking and breaks it down into algorithms and lines of code which reflect the thoughts of its designers. This is why the place of technology within the structures and institutions of society must be contested, for at stake is the control of knowledge—politics and power—and the chance to be the poets of ourselves and our world

Datafication and *The Game*: Transdisciplinary intent as a counter-conduct for doing AI research ethically

Caitlin Doogan

The intensified scrutiny of performance produces concomitant levels of vulnerability and insecurity. Teaching evaluations enlist academic subjects to ask, 'Am I good enough?'; measures of quantity (productivity and income generation) enlist academic subjects to ask, 'Am I productive enough?'; and evaluations of quality (impact and academic standards) enlist academic subjects to ask, 'Am I smart enough?' These three questions form the matrix in which generic subjectivities are constituted, performed and measured. They are not, however, only predictive of what will be recognised as quality teaching and research, but of anxious subjects and performances (Davies & Bansel 2010, p.4)

Work-in-Progress

In my work and education in applied and empirical AI and machine learning research, I feel I resist a realm of academic conduct known as *the game*, a well-worn metaphor for the competitive academic environment. Being a data scientist and Transdisciplinarian, I suffer the instability of self that accompanies the requirement to slip between discursive realms. The commitment to multiple, sometimes conflicting epistemologies and demand to exercise pragmatic gameplay has not assured me that the game does not force the abandonment of moral obligations and ethical responsibilities. Indeed, this preoccupation with the rules intrudes on my sense of self, in particular, my sense of ethics.

There is a valid perception that the university-based community of AI researchers lack a commitment to the normative ideals of ethical, responsible and socially impactful research. I argue that this is the result of the subjectivity created through hegemonic discursive practices and power-relations (Foucault, 1997), that is, neoliberal academia. In accepting that the game presents challenges to ethical and socially impactful AI research, I present a Transdisciplinarity intent as a strategy to reclaim commitment to ethical responsibilities as an AI researcher.

The ethics of algorithms is a current discussion that warrants attention from those academics who are training the next generation of AI researchers. While this group do not principally disagree with conduct of ethical AI, they have not made provisions for such practical knowledge within their mentoring of early career researchers (ERC) who are unlikely to gain competency in this research conduct. AI technologies are already so entangled in the way society functions, and we, as individuals, live our lives. Why does it appear then that as creators, we care little for ethical practice or the social consequences of our work? One possible answer is this:

We are incentivised not to care.

The datafied academic

The neoliberal ideology has seen the ongoing marketisation of higher education, and the commitment of academics to servitude. Early critiques of neoliberal academia were concerned with the resulting reorientation of knowledge as universities became a ‘site of capitalist circulation and accumulation rather than of reasoned argumentation.’ (Hanke & Hearn 2012, p.12). The relationship between neoliberal academic governance and AI researchers can be explored using Foucault's concept of governmentality, a sophisticated form of ‘power which has the population as its target, political economy as its major form of knowledge, and apparatuses of security as its essential technical instrument.’ (Foucault 2007, pp.107-108). Here, the academic seeks forms of security through the demonstration of metricised performance targets, namely publications and grants (Kennedy & Hill 2017). These targets are ultimately constructed to achieve the universities ambitions, chiefly productivity and efficiency (Rose 1991). As the achievement of performance targets equate to survival, the academic becomes self-governing and responsibilised. In managing themselves, they shoulder the responsibility for both their own ambitions but also universities (Morrissey 2013; Gill 2009).

Governmentality is expressed in the neoliberal processes of universities by the linking of quantified performance to self-worth. The academic must participate in auditing and self-auditing practices to demonstrate that they are responsible and accountable. These exercises are Foucault’s *technologies of the self*, eliciting self-

governance through a commitment to improving on one's past performance (1997). Thus, the ambitions of the university become the ambitions of the self-governing academic, securing their viability and subjection. The datafied academic is self-driven to satisfy the university to not only survive but to psychologically reassure themselves that they are a good academic.

When discussing the datafication of the self, Foucault's concepts of governmentality and subjectivity are suitable to understand why the game is so rabidly influential on the AI researcher's ethical orientation. I posit that the speed and brutality of the game are by far the greatest in AI vis-à-vis other academic disciplines, a symptom of AI's role in automated capitalism. The capitalistic global market in which the neoliberal university competes introduces the much-hyped commodification of AI products into gameplay. These products are marketed to attract and generate the coveted industry funding for universities competing on the global stage. Thus, the commodification of AI research and increasing industry influence sees the datafied academic forced to conform to the resulting research and educational agendas of the university. The normative culture of AI research is less emergent than it is repressive.

I've never done an ethics application

– Professor of Machine Learning, Australian University.

By default, AI research for social impact is disincentivised for ERCs as this form of applied research nearly always requires working with complex data sets to address specific and contextual socio-technical challenges. For the responsibilised academic, failure to publish quickly degrades self-worth (Kennedy & Hill, 2017). Applied work is expensive, time-consuming and failure-prone, therefore presenting a risk to their psychological security. A further disincentive to such work is the difficulty in establishing its contribution within the disciplinary literature. The velocity of the AI publication cycle, a problem in itself, does not lend itself to the fostering of applied AI research, particularly to the less well-resourced ERC. Indeed, social impact is very rarely a criterion for AI disciplinary publication, and extended discussion justifying the efforts would be seen as a bizarre and rejection worthy inclusion.

The logistics of applied work presents a further obstacle to its motivation. Generally, AI researchers do not have the skills or knowledge to do socially motivated applied research, which requires the use of critically-orientated qualitative methodologies. Indeed, where data and algorithms are concerned, the hegemonic methodological doctrine remains firmly within the quantitative camp. There is no incentive to teach ERC's these skills and there is little recognition from within the AI research community that this is a problem. Published work may not translate well to applied contexts, limiting the ability to make use of this knowledge by other disciplines such as medicine. The use of prototypical AI research output may and has led to poor quality and potentially harmful work (Goto et al. 2019).

Ethical appraisal of AI research is considered a perfunctory administrative chore. It is neither taught nor mandated within the discipline, and while an ethics application is a self-auditing exercise, the AI disciplinary assumption is that it is not required if the research does not involve people as the subjects of that research. Indeed, an ethics appraisal logically contradicts efficiency targets as it slows down the progress of the research and is not considered productive within the discipline. Here, the datafied academic privileges the ambitions of the university over their obligation to the ethical

conduct of the self. As such, the neoliberal subjects 'morality is intimately muddled with that of the entrepreneurial institution whose project is a pragmatic one of survival within the terms of government.' (Davies & Bansel 2010, p.9). In AI, research it is morally valid until the university says it is not.

AI for (what looks like) social good

Publicly funded universities have a responsibility to distribute socially beneficial knowledge, which they demonstrate to government bodies generally, through sophisticated performance measurement frameworks (Martin 2011; 2013; Torres 2011). Predictably, the measurement of the ill-defined *social impact* of research presents a perverse incentive to the universities to focus on demonstrating the image of social impact, rather than ensuring that this is being done (Martin 2011). As a result, research culture has undergone 'a shift from valorising the content of research to the mere existence of the research in a numerical system.' (Kennedy & Hill 2017, p.777). The effect of datafying universities in this way is termed the impact agenda, where the higher the perceived social impact of a project, the more valuable it is for the university to promote that it could generate social impact.

The impact agenda is a dangerous element in AI research. The ability to envision impact is necessary to attract public research funding, but to do so authentically requires social and application knowledge. While achievable in multi-disciplinary work, it difficult to do in empirical AI research as the potential impact of the research is not always obvious. The datafied academic is incentivised to attract funding and may be inclined to embellish and fabricate the benefit of work that they will do (Chubb & Watermeyer 2017). As such, the rules of the game state that research is genuinely impactful, so long as it sounds like it should be.

Truly ethical and socially impactful AI research is both incentivised and disincentivised in manifestly perverse ways. In examining the underlying reasons for this from a Foucauldian perspective, further troubling questions have arisen. These questions pertain to the validity of the claims of contributions to knowledge and about who is the responsibility for how that knowledge is utilised.

Transdisciplinary intent

The ethically responsible individual is fundamentally challenged in their role as an AI researcher by the deincentivisation to conduct socially responsible work. However, the requirement to be conducted as a governed subject of any moral authority does not mean that ethical autonomy cannot be reclaimed. Indeed, this may be achieved by subverting self-governance via the generation of new counter-conducting practices (Foucault 2007). Counter-conduct is a form of resistance which offers sanctuary from such conflicts, by way of thought or reflection (Demetrio 2016). For the datafied academic, counter-conduct is achieved by the demand on the self to co-govern and redirect the mechanisms of those governing, thus resisting the ongoing 'mutual reinforcement of relations of power, knowledge, and subjectivity.' (Odysseos 2016, p.9). I offer that a transdisciplinary mindset is a counter-conduct to achieve this.

AI scholarship is already crushed under the deluge of contextual-less, discipline-bound papers. This situation is an expression of the same problem that Transdisciplinarity aims to address (Nicolescu 2007; 2002). That is, 'the helplessness of the application of a proliferation of knowledge and knowledge systems' (Martin

2014, p.77). The Transdisciplinarian rejects fragmentation and seeks to connect the object, AI research, to the subject, people.

A Transdisciplinary mindset requires directing efforts towards the social processes in which that research will be embedded (Jantsch 1972). The researcher must be willing to engage with extra-disciplinary knowledge as well as practical, personal and local knowledge. Ethical Transdisciplinarity requires the humility to recognise that 'no one perspective, discipline, sector or world view constitutes a privileged place from which to understand the world.' (McGregor 2015, p.115). As a counter-conduct, a transdisciplinary mindset is not satisfied to play the game by the rules. This does not mean acting as an intellectual risk-taker or institutional transgressor but by gaining the self-disciplined reflection and reflexivity needed to integrate knowledge into practice, so as not to commit this privileging (Augsburg 2014).

AI is in its infancy as a discipline and holds a tremendous capacity for innovation, currently commodified in neoliberal academia. While temporarily safe, the AI researcher cannot maintain a siloed mindset which offers only fragility and rigidity instead of the resiliency and adaptability needed to thrive and survive the dynamic gameplay of this discipline. Transdisciplinary intent allows the datafied academic to commit to the achievement of the ambitions of the neoliberal institution while gaining control over the mechanisms by which they do this. While the governed academic no longer has control over their research agenda, they can control the knowledge on which their work is founded and the intent behind its creation. As such, transdisciplinary intent is a practice of counter-conduct that brings subjugated discourses to the fore and enable different ways of being and seeing.

A trilemma of power and the Internet: How globalization and the Internet break down political modernity

Eduardo Villanueva Mansilla

The following contribution is part of a larger body of work centred on understanding the relationship between the performative side and the political side of ICTs and Internet practice, and how these affect the viability of nation-states such as those in Latin America. Practically that means trying to write alongside those lines, in dialogue with people from ICTD, digital media studies and Political science. I aim to figure out how to connect our differing concerns and realities with the potential for some unified understanding of what is important. What I have found it is most interesting in entering this transdisciplinary conversation is that I have been forced to shape my concerns into a narrative that is understandable to those that have very little in common with my experience, both in academia and in life. In response to the question of how to bring our concerns together to influence what is important, I propose a reversal: How can I get influenced by different outlooks and preoccupations?

The premise

The success of the Internet owes to the conjunction of a process and a state of mind. This process, globalization, is defined by the collapse of the Soviet *world*, reducing ours to just two of what used to be three worlds; also, globalization can be understood as the victory of a specific form of insertion of national economies into the world market, where capital flows are unhindered, financial services are all-powerful,

and barriers to direct consumption of services and increasingly, of goods, fall one after the other (Cardoso 2009).

Now the Global South, faced with globalization as promoted from the triumphant hegemon, has opted to accept the notion that openness of markets and free flow of information is the ideology that brought democracy to the world, and that the future requires an acceptance of a combination of liberal democratic politics with liberalization and simplification of trade— globalization as understood in the 1990s. A new state of mind accompanies this triumphant economic process.

Tn the early 1990s, the Internet existed as a rather obscure if not opaque resource for academics and, aside from Africa and the old people's democracies, was accessible throughout most of the world. Under the auspices of the then current, pro-globalization Clinton administration, the *Net* transitioned from a channel of individual freedom as defined by hackerdom, into a political project, defined as a support for globalization.

The end of alternative understandings of development was evident by that time. One of the regions that tried very hard to establish its take of development, Latin America, had suffered a terrible decade of economic collapse and political crisis. Consequently, most Latin American countries were ready to shift gears towards an economic system that allowed for more accumulation and access to modern services. This meant ceding sovereignty while becoming part of the world system of trade and industry. Accepting globalization under these terms meant that these countries would be comfortably settling themselves into the midst of Rodrik's trilemma.

Across the continent, globalization was exacerbating tensions and weaknesses already existing at the nation-state level. Inevitably those tensions would bear fruit in the form of serious conflicts over the capabilities of governments to drive policies geared towards local needs instead of global trends. These criticisms became more systematic after the wonderful years of economic expansion, the various crisis that shook the world in the 2000s. Critics contended that globalization demands global shaping of national laws and regulations and that increased speed of economic integration (enabling frictionless trade), required surrendering control over to international and or multilateral bodies. However, such action would result in diminished national autonomy and cession of sovereignty. If national autonomy were to strengthen, it would impede globalization; democracy necessarily falters when the rules and regulations are created to facilitate the interaction on global with markets instead of the protection of local industry and consumers.

Rodrik's trilemma (Figure 1) proposes that hyperglobalization, democracy and national self-determination cannot coexist and that one of them has to be surrendered away to achieve the other two (Rodrik 2011, p. 2011).

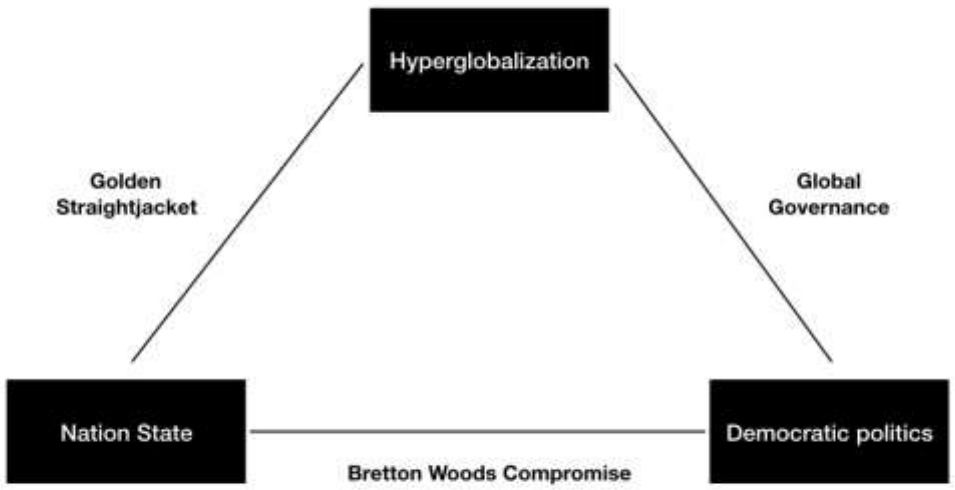
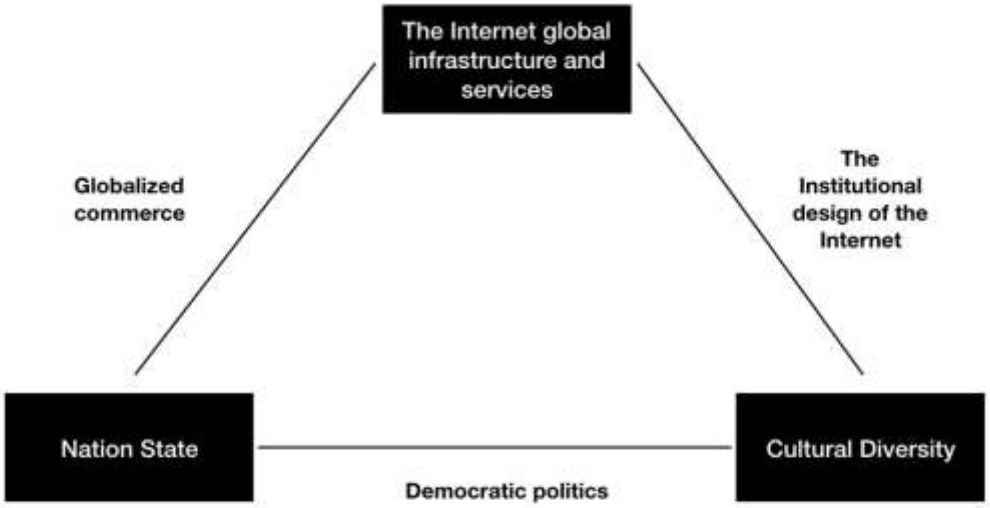


Figure 1. Rodrik's trilemma or, the political trilemma of the World Economy. Here, national sovereignty, democratic politics and a state of hyperglobalization are mutually incompatible as two of these may be integrated but all three can never by simultaneously combined (Rodrick 2011, p. 201).

The Internet is part and parcel of the paradox created by this trilemma. As it is a global system, defined by its openness to innovation and investment, accepting the full potential of the Internet requires an allowance for hyperglobalization, only limited by ancillary activity, local regulation or market conditions (i.e., customs, and transportation and delivery costs, for physical items). The increased demand for internet connectivity has necessitated significant investment in telecommunication networks. As a consequence, there has been ongoing integration with global telecom firms. Services accessible through the Internet are inevitably global. While this was the case in the 1990s, and remains so now, the difference between the leading search engine of the 1990s ,Altavista, and Airbnb, a contemporary online marketplace for arranging accommodation, is that the first one provided access to the Internet's internal goods, i.e. links to other pages, and the second inserts itself into local economies, conflicting with local regulations set in place to protect both local industry and consumers— in both cases, it happens at a global scale.

From politics to cultural consumption, the Internet is a disruptive force that influences societies in equally negative and positive ways. However, the Internet is not under the control of local democracies, at least not a forceful, regulation-based way. Indeed, this is an impossibility as the Internet, as a global system is governed by a multi-stakeholder process that, though innovative, is driven by commercial interests. Thus, the decentralized online economy remains outside of the control of state actors', even at the taxation level, as many horror stories in Europe testify (cf. Burton, 2019, among many others). Moreover, the Internet provides services that have changed access to local culture, but and allowed for questionable privacy-breaching practices. In other

words, hyperglobalization run riot, thy name is Internet. Considering these ideas, I propose a modified Rodrik's trilemma for the Internet can be proposed:



The Political Trilemma of the Internet

Figure 2. The Political trilemma of the Internet.

Globalized trade requires the nation-state to facilitate telecommunications, imports and service infrastructures necessary to provide for an attractive market for investors. At the same time, if the nation-state commits to democratic politics, it has to provide for an active and culturally diverse public sphere, meaning that room for a non-market based cultural policy must be left, as demanded by many different sets of local political stakeholders. However, to open up a country to the Internet means accepting its institutional design, the protocol politics that are setting up a model of symbolic goods circulation. This depends upon the availability not just of telecommunications infrastructure, but of the services and platforms that define the Internet as it is now, in the eyes of the consumer.

As with Rodrik's trilemma, there is an inherent conflict between any combination of these items. Either we choose two of them or one will be nullified or weakened, almost to the point of collapse by any given combination of the other two. The pressure of globalization places on emerging democratic economies is a manifestation of the need to maintain some level of political autonomy while sustaining the expansion of opportunities, of which the economic side of the Internet provides.

Of course, there are many potential opportunities to grow a creative and engaged local cultural arena through the Internet. It is not just the global commercial, cultural producers that count, as it has been demonstrated all around the world. However, it is not the case anymore that single mid-sized nation-states control what cultural items

circulate their territory, what content their citizens engage with, or how content that conflicts with local expectations is handled.

While the significant disruption of policy autonomy brought by the Internet has only recently caused issues, this trajectory could be seen from the earliest moments. There were a significant number of positions that drew on the *nicer* potentials of the Internet, positioning it as a powerful engine of equality and democracy, but those dreams were overblown. Research since the early 2000s has demonstrated that the potential for enhancing democracy and cultural autonomy was concurrent with the potential to accelerate globalization. Additionally, recent research points to the fact that all around the world, individuals of all income levels expect to use the Internet for consumption and entertainment (Arora 2019). Add to this the clear trend towards post-truth politics that the Internet has facilitated, and the idealistic imagining of the Internet as a new home of the mind, Barlow's 'civilization of the Mind' (1996), seems like a nice but naive dream.

Power as what we do not have

One thing that has become apparent since the generalization of Internet access, and through the history of ICTD and community informatics projects, is the way that digital technologies have been geared towards individual use, and consequently, the extraordinary capacity of these to empower individuals, even in the context of large organizations. Of course, firms are quite able to channel their vast technological capacities for profit-making purposes, but the issue here is the vast majority of consumer technologies available have been designed for individual satisfaction. In the early days, a collective solution to improve Internet access was popular, yet services were made to cater to individual interests and needs. Thanks to mobile telecommunications expansion Internet access has increased, but the fact remains that such technology empowers the individual as a consumer first. While there are many examples of individuals becoming rich or socially relevant through their astute use of these digital technologies and media, the vast majority of the public simply consumes.

This trend to individuate is powerful and shapes our relationship with technology, our notions of public and social affairs, and in the end, with power as collective action instead of just formal institutionalized exercises of sovereignty. However, this creates a severe simplification of what is at stake. An example being Facebook's presentation to consumers that the solution of all and every problem lies in trusting that private actors will find a way to address all problems and provide for a solution in an easy package. It is just a matter of getting your Facebook account, and all will come to you. The acceptance of this by consumers sees the reinforcement of the individuation -commercial axis. Globalization scores another goal leaving ICTD to languish. This is because individuation means that the Internet, the most powerful mechanism ever invented to search and use content, and to communicate between people and firms, is defined by individual interests and skills and entirely shaped by their experiences. The Internet is a marvellous way to disrupt mechanical solidarities that are created by belonging to a community. This disruption is achieved through the development of organic solidarities based on interests and sociocultural coincidences that move beyond the immediate social experience resultant from personal interactions or mass media consumption. Even in its earlier state, the Internet provided for cultural experiences that were completely unattached to immediate sociocultural ones. These new experiences were reinforced by new mechanisms of communication across the

Internet's new social networks. Nowadays, even our, *real world* social interactions are mediated by social media, and it is evident that the extension and variability of sociocultural alternatives offered by the Internet empower the individual beyond their immediate social conditions in a way that disrupts communities and social expectations.

Created for profit-making and disseminated around the world, it impossible to think of ICT (as created and run by the global giants) as existing in the public interest. Those that create these technologies have little interest in real public dialogue around any semblance of public interest, as public interest runs counter to theirs. Thanks to the absence of restraints that globalization consecrated as the road to global prosperity, we see artefacts emerge, such as algorithmic biasing, as a result of private interests run wild.

As all the actors involved in the Internet economy push for better connectivity and increased consumption, any solution to social issues becomes a road to individuation. Readily available commercial solutions to many social problems exemplified that technological determinism run amok, as well as a disguise of the real effects of individuation. Indeed, contested fields of politics become a narrative, performative exercise, ready to be used by those that define their politics as contention between different rages that hold very little power.

Social rage happens almost without warning. The political and social tremors that course through Latin American countries like Ecuador and Chile resulted in sudden and social explosions in late 2019. These express both the potential for the individuation of power—as people are able to share and multiply their indignation via social media channels— and the diminishing of actual power against economic systems that are designed to redistribute power from nation-states to the system. It is quite easy to promote rage against the machinery of global power. The hard part, for which ICT is not useful, is to translate that rage into significant collective action. Rage may stop the immediate causes such as local political corruption but cannot impose itself over the *machine*.

Newer shapes of power

The existence of nation-states cannot be denied, and their diminishing power is self-evident. Asymmetries of power are palpable. By virtue of its market share, the EU can shape the privacy regulations in many non-EU countries as a result of the power it holds over actors like Facebook and Google, as they have done with GDPR. Other governments, such as the UK parliament, are not necessarily able to push their concerns directly with firms that have acted in ways that destabilize the polity, as they have tried with their condemnation of Facebook in early 2019 (Commons, 2019).

Newer shapes of power demand newer forms of exercising power. Amid a climate emergency, the complete absence of a global polity is a testimony to our unpreparedness to face the real political challenges of the *Age of Confusion* (continuing the traditions of Hobsbawm).

While there may be no actual answers, there are several nonanswers, that is, responses that we know may not work. Foremost: Globalization has reached its limits, the gridlock denounced by Hale, Held and Young (2013) is clear and well-defined. How to create an alternative will demand some form of the global polity, and that may not exist as long as our global public sphere is privatized and run for profit.

Beyond that, digital technologies may be useful for small scale responses, and to ignite social rages, its performative slant prizes such moves. The one thrust that

should come from those interested in making a global public sphere in the public interest viable is to remove as many layers of performative demands as possible and insist in a return to the ideals of modernity, of dialogue and fact-based rationality, but on a global and genuinely scale.

Easier said than done …

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