Michael A. Peters
Tina Besley
Petar Jandrić
Xudong Zhu   *Editors*

Knowledge Socialism

The Rise of Peer Production: Collegiality, Collaboration, and Collective Intelligence

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East-West Dialogues in Educational Philosophy and Theory

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Michael A. Peters, Faculty of Education, Beijing Normal University, Beijing, Beijing, China

Chuanbao Tan, Faculty of Education, Beijing Normal University, Beijing, Beijing, China

Tina Besley, Faculty of Education, Beijing Normal University, Beijing, Beijing, China

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Editors
Michael A. Peters
Faculty of Education
Beijing Normal University
Beijing, China

Petar Jandrić 🆔
Department of Informatics and Computing
Zagreb University of Applied Sciences
Zagreb, Croatia

University of Wolverhampton
Wolverhampton, UK

Tina Besley
Faculty of Education
Beijing Normal University
Beijing, China

Xudong Zhu
Faculty of Education
Beijing Normal University
Beijing, China

Contents

Contributors

Sonja Arndt University of Melbourne, Melbourne, Australia

Daniel Badenhorst University of Auckland, Auckland, New Zealand

Ronald Barnett University College London Institute of Education, London, UK

Tina Besley Beijing Normal University, Beijing, China

D. M. Bothwell Newcastle University, Newcastle, UK

Derek R. Ford DePauw University, Greencastle, IN, USA

Steve Fuller Department of Sociology, University of Warwick, Coventry, UK

Andrew Gibbons Auckland University of Technology, Auckland, New Zealand

Liz Jackson Hong Kong University, Pok Fu Lam, Hong Kong

Petar Jandrić Zagreb University of Applied Sciences, Zagreb, Croatia;
University of Wolverhampton, Wolverhampton, UK

David W. Kupferman Minnesota State University, Moorhead, USA

Pierre Lévy University of Montréal, Montréal, Canada

Timothy W. Luke Virginia Polytechnic Institute and State University,
Blacksburg, USA

Greg William Misiaszek Beijing Normal University, Beijing, China;
Paulo Friere Institute UCLA, Los Angeles, USA

John Morgan University of Auckland, Auckland, New Zealand

David Neilson University of Waikato, Hamilton, New Zealand

Mark Olssen Department of Politics, University of Surrey, Guildford, UK

Michael A. Peters Beijing Normal University, Beijing, China

Sharon Rider Department of Philosophy, Uppsala University, Uppsala, Sweden

P. A. Stewart MIMA School of Art and Design, Teesside University, Middlesbrough, UK

Marek Tesar University of Auckland, Auckland, New Zealand

Zhu Xudong Beijing Normal University, Beijing, China

Chapter 1
Introduction

Michael A. Peters, Tina Besley, Petar Jandrić, and Zhu Xudong

Introduction

We now live in the age of global 'knowledge economy' and 'knowledge capitalism.' According to Peters (2019), these terms 'have been used with increasing frequency since the 1990s as a way of describing the latest phase of capitalism in the process of global restructuring'. While the mainstream literature usually understands 'knowledge economy' and 'knowledge capitalism' as inevitable consequences of recent socio-technological developments, Peters explores the term

> *not as a term of approbation but as a disruptor*, as a term that first situates knowledge economy as 'knowledge capitalism' in an info-tech digital capitalist historical phase that signalled a profound structural transformation and that contained within it also other radical open possibilities that also enhanced free knowledge exchange and approximate conditions of 'knowledge socialism' based on collaboration, sharing and the peer economy. (Peters 2019)

In *Knowledge Socialism. The Rise of Peer Production: Collegiality, Collaboration, and Collective Intelligence*, knowledge socialism is viewed as the next stage in

M. A. Peters (✉) · T. Besley · Z. Xudong
Beijing Normal University, Beijing, China
e-mail: mpeters@bnu.edu.cn

T. Besley
e-mail: tbesley@bnu.edu.cn

Z. Xudong
e-mail: zhuxd@bnu.edu.cn

P. Jandrić (✉)
Zagreb University of Applied Sciences, Zagreb, Croatia
e-mail: pjandric@tvz.hr

University of Wolverhampton, Wolverhampton, UK

development of knowledge-making and dissemination that disrupts the current stage of development of capitalism. Positioned in, against and beyond (Holloway 2016) 'knowledge economy' and 'knowledge capitalism,' knowledge socialism refers to a new global collectivist society that is coming online based on communal aspects of digital culture including sharing, cooperation, collaboration, peer production and collective intelligence.

As we wrote in the call for chapters for this book, aspects of knowledge socialism include, but are far from limited to, the following list of themes, sub-themes and approaches:

- the rise of peer production;
- the history of peer review;
- openness—open science, open access;
- the model of open knowledge production;
- cognitive capitalism;
- knowledge capitalism;
- knowledge cultures;
- forms of collegiality;
- creative labor versus human capitalism;
- collective intelligence;
- social innovation.

Elements on this list seem to have little in common; depending on personal interest, each and every one of us could supplement it with few more concepts. Listing numerous aspects of knowledge socialism (and perhaps even classifying them into clusters and taxonomies) is useful, because it provides us with important points of departure for our research. Looking beyond classification, however, we can notice that knowledge socialism is always somehow related to technology.

Here, we understand technology in the widest sense described by Ellul (1964) (we find Ellul's definition useful although we disagree with many other aspects of his philosophy). Taking the example of this book, technology is the assemblage of Internet infrastructure which enabled reviewers to read draft chapters and submit their comments; technology is the administrative back-end offered by our publishers; technology is writing and formatting standards applied to abstracts, keywords and references; and technology is the way this book looks and feels in readers' hands and/or on readers' screens. Looking beyond production, technology is the requirement that all chapters need to undergo a minimum of two anonymous peer reviews; our ethos that editors and authors should work in a collegial spirit of mutual support and help; and that the book publishes a mix of invited authors and authors who responded to our open calls.

Knowledge socialism described in this book is digitally enabled, but paraphrasing Heidegger (1962), the essence of knowledge socialism which produced this book is nothing digital. In the recent literature, this view to relationships between human beings and digital technologies has been described by the notion of the postdigital.

'The postdigital is hard to define; messy; unpredictable; digital and analog; technological and non-technological; biological and informational. The postdigital is both a rupture in our existing theories and their continuation.' (Jandrić et al. 2018) Knowledge socialism is a postdigital rupture and continuation of global 'knowledge economy' and 'knowledge capitalism', and chapters in this book explore a number of ways our collective digital tools have the power to create the intellectual commons and reshape our minds.

Knowledge Socialism—History and Genealogy

The concept of knowledge socialism has emerged from the works of Michael Peters and Tina Besley over the past two decades. This is not to say that other people did not write about similar questions—Besley and Peters gladly acknowledge that their work has been influenced by numerous authors and approaches. However, the exact wording—knowledge socialism—has first been used in Peters' (2004) article 'Marxist Futures: Knowledge Socialism and the Academy'. Over the years, Peters and Besley have developed a number of related concepts such as knowledge cultures, radical openness and others. They would present these concepts as provocations or McLuhanist 'thought probes' (McLuhan 1964), gather authors around journal special issues and edited books and explore theoretical and practical implications of their provocations. These activities have been underlined by academic values such as openness and practically supported by Peters and Besley's engagement in academic publishing industry.

Alongside their thought probes, Besley and Peters have engaged in various practical projects. They started new publications such as the *Video Journal of Education and Pedagogy*,[1] which is arguably the first video journal in the humanities and social sciences, and the *Open Review of Educational Research*,[2] which experiments with novel forms of political economy of academic publishing, and others. They went even more experimental with projects such as The Editors' Collective,[3] which is a group of academics working on collective approaches to knowledge-making and dissemination. Recent developments from these groups, such as the 'Open Access meeting place for those interested the intersections of education, philosophy, technology, indigenous and identity issues, and the environment' called PESAAgora,[4] explore further practical opportunities for knowledge socialism as we write these words.

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[1]See https://brill.com/view/journals/vjep/vjep-overview.xml. Accessed 1 May 2020.

[2]See https://www.tandfonline.com/loi/rrer20. Accessed 1 May 2020.

[3]See http://editorscollective.org.nz/. Accessed 1 May 2020.

[4]See https://pesaagora.com/comingsoon.html. Accessed 1 May 2020.

These theoretical and practical projects have set a theoretical background and accumulated a wealth of practical experience. Probably most importantly, they have built a large network of scholars who are interested in knowledge-making and dissemination and who are not afraid to experiment, individually and collectively, with novel forms of academic work. In the following sections, we will briefly describe Peters and Besley's concepts of knowledge cultures, radical openness and knowledge socialism which served as main theoretical influences for development of this book.

Knowledge Cultures

In *Building Knowledge Cultures: Education and Development in the Age of Knowledge Capitalism*, Peters and Besley (2006) developed the notion of 'knowledge cultures' as a basis for understanding the possibilities of education and development in the age of knowledge capitalism. 'Knowledge cultures,' they argued, refers to the cultural preconditions in the new production of knowledge and their basis in shared practices, embodying preferred ways of doing things often developed over many generations. These practices also point to the way in which cultures have different repertoires of representational and non-representational forms of knowing. In the book, they discuss knowledge cultures in relation to claims for the new economy, as well as cultural economy and the politics of postmodernity. The book focuses on national policy constructions of the knowledge economy, 'fast knowledge' and the role of the so-called new pedagogy and social learning under these conditions. In that book, they included a postscript 'freedom and knowledge cultures' commenting on the shift from a metaphysics of production to one of the consumptions and the emergence of a knowledge global commons as the basis for a global civil society as yet unborn. Here, they were attempting to realize in outline the development of knowledge cultures based on non-proprietary modes of production and exchange.

Somewhat later, Michael Peters tried to work up this idea in terms of the promise of creativity giving the concept a reading by reference to emerging form of openness in a book called *Knowledge, Science and Knowledge Capitalism*:

> We live in the age of global science – but not, primarily, in the sense of 'universal knowledge' that has characterized the liberal metanarrative of 'free' science and the 'free society' since its early development in the Enlightenment. Today, an economic logic links science to national economic policy, while globalized multinational science dominates an environment where quality assurance replaces truth as the new regulative ideal. This book examines the nature of educational and science-based capitalism in its cybernetic, knowledge, algorithmic and bioinformational forms before turning to the emergence of the global science system and the promise of openness in the growth of international research collaboration, the development of the global knowledge commons and the rise of the open science economy. *Education, Science and Knowledge Capitalism* explores the nature of cognitive capitalism, the emerging mode of social production for public education and science and its promise for the democratization of knowledge. (Peters 2013a, b)

Since then, the concept of knowledge cultures has been developed in numerous publications (Peters and Jandrić 2015, 2018; Peters et al. 2018).

Knowledge cultures is a fundamental concept that Peters, Besley and others developed in opposition to the dualism of the knowledge economy and knowledge society, and they fleshed out a critical concept that carried normative content by focusing on epistemological notion of 'the community of inquiry' drawing from Wittgenstein, Dewey and Pierce that also implied an ethics of sharing and collaboration. These philosophers provided the resources for a social reading of knowledge that was consistent with Marxist reading of knowledge as being based in a set of social relations. The pragmatist emphasis of the 'community of inquiry' and especially Pierce's epistemology seems to provide a warrant for investigating 'knowledge socialism' as a historical program.

Radical Openness

Michael Peters coined the concept of radical openness as a result of a series of published articles and books on the concept of openness (Peters and Britez 2008; Peters and Roberts 2011; Peters 2013a, b, 2014a, b). In particular, working with colleagues like Peter Roberts, Peters had tried to rework what they called 'the virtues of openness' linking it to the development of scientific communication, the reinvention of the public good and the constitution of the global knowledge commons (Peters and Roberts 2011). They put the case for the creation of a new set of rights in a transformed global context of the 'knowledge economy', that is, universal rights to knowledge and education. In this perspective, they argued that education needs to be reconsidered as a global public good, with the struggle for equality at its center. By charting various conceptual shifts, they had previously distinguished between three discourses of the 'knowledge economy': the 'learning economy', the 'creative economy', and the 'open knowledge economy', each with its specific conceptions of knowledge and economy (Peters 2010). In the face of neoliberalism, privatization of education and the monopolization of knowledge, they argued that the last of these three conceptions—the open knowledge economy—offers a way of reclaiming knowledge as a global public good and of viewing openness as an essential aspect of an emerging global knowledge commons that fosters open science and open education. Later on, these conclusions have been extended to the digital university (Peters and Jandrić 2018).

Now, we are at a stage where we can begin also to investigate links between creativity, the mode of production and the logic of public organizations. With the advent of the Internet, Web 2.0 technologies and user-generated cultures, new principles of radical openness have become the basis of innovative institutional forms that decentralize and democratize power relationships, promote access to knowledge and encourage symmetrical, horizontal peer learning relationships. In this context, radical openness is a complex code word that represents a change of philosophy and ethos, a set of interrelated and complex changes that transforms markets, the mode of production and consumption, and the underlying logic of our institutions. Peters argues that we need to examine the significance of peer governance, review and

collaboration as a basis for open institutions and open management philosophies. This form of openness has been theorized in different ways by Dewey, Pierce and Popper as a 'community of inquiry'—a set of values and philosophy committed to the ethic of criticism that offers means for transforming our institutions in what Antonio Negri and others call the age of 'cognitive capitalism'. Expressive and aesthetic labor ('creative labor') demands institutional structures for developing 'knowledge cultures' as 'flat hierarchies' that permit reciprocal academic exchanges as a new basis for public institutions.

Social processes and policies that foster openness as an overriding value as evidenced in the growth of open source, open access, open education and open science and their convergences that characterize global knowledge communities that transcend borders of the nation state. Openness seems also to suggest political transparency and the norms of open inquiry, indeed, even democracy itself as both the basis of the logic of inquiry and the dissemination of its results. Institutions are humanly devised; they set constraints and shape incentives: economic institutions such as property rights, or contract shape economic incentives, contracting possibilities and distribution; political institutions, including form of government, separation of powers and so on, shape political incentives and distribution of political power. Today, with the advent of the Internet and user-generated cultures, new principles of openness have become the basis of innovative institutional forms that decentralize and democratize power, access to knowledge and encourage peer learning relationships. Openness is a value and philosophy that also offers us a means for transforming our institutions.

Knowledge Socialism

In early 2004, Peters defined knowledge socialism as follows:

> One form of new expression concerns what I call *knowledge socialism* to indicate the new struggles surrounding the politics of knowledge that directly involve the academy and I do not mean simply refer to the role of theory. I am referring to what has been called knowledge in the age of 'knowledge capitalism', a debate that increasingly turns on the economics of knowledge, the communicative turn, and the emerging international knowledge system where the politics of knowledge and information dominates. One issue concerns intellectual property, not only copyright, patents and trademarks, but also the emergence of international regimes of intellectual property rights, and the accompanying emphasis on human capital and embedded knowledge processes that now drive university management. (Peters 2004: 406)

In 2012, Peters pits the concept of knowledge socialism as an alternative to the currently dominant 'knowledge capitalism':

> Whereas knowledge capitalism focuses on the economics of knowledge, emphasizing human capital development, intellectual property regimes, and efficiency and profit maximization,

knowledge socialism shifts emphasis towards recognition that knowledge and its value are ultimately rooted in social relations (Peters and Besley 2006). Knowledge socialism promotes the sociality of knowledge by providing mechanisms for a truly free exchange of ideas. Unlike knowledge capitalism, which relies on exclusivity—and thus scarcity—to drive innovation, the socialist alternative recognizes that exclusivity can also greatly limit innovation possibilities (see 'Introduction', Peters et al. 2009). Hence rather than relying on the market to serve as a catalyst for knowledge creation, knowledge socialism marshals public and private financial and administrative resources to advance knowledge for the public good. (Peters et al. 2012: 88)

Finally, in a 2019 editorial, Peters identifies publication paywalls as 'one of the biggest hurdles to openness' and writes:

While Plan S and journal Open Access does not exhaust the concept of 'digital socialism' or even approximate to a political system, it does provide a massive watershed to academic publishing that threatens to destabilize the market and the neoliberal idea of the university insofar as it impinges of the paradigm of intellectual property and checks the dominance of big publishers in the West that props up a hegemonic system of global journal knowledge. As for 'digital socialism' or 'post-capitalism' more broadly within academia, we might have to wait a while for the main revolution. (Peters 2019)

It is within this theoretical framework that this book develops the concept of knowledge socialism in 2020.

Knowledge Socialism Today

This book is divided into three sections and a collectively written concluding chapter. The first section, 'Peer production and collective intelligence', explores the theory of knowledge socialism. The second section, 'The challenge of political economy', looks into politics and practice of knowledge socialism. The third section, 'Education for knowledge socialism', explores ways in which educational systems should respond to, and prepare people for, working in the age of knowledge socialism. The concluding chapter, 'The highway robber's road to Knowledge Socialism: A collective work on collective work', presents a collectively written commentary on the propositions and provocations raised in Michael Peters' concept of knowledge socialism and Peters' in-depth response.

Peer Production and Collective Intelligence

In the first chapter, 'Toward a Theory of Knowledge Socialism: Cognitive Capitalism and the Fourth Knowledge Revolution', Michael A. Peters introduces the book by a retrospective view of a body of work under the title 'knowledge socialism'. Linking timeless philosophical principles with latest 5G technologies, Peters sets the scene for diverse views and approaches presented in the rest of the volume. The second chapter,

'Toward an epistemological mutation in the humanities and social sciences' by Pierre
Lévy, contributes to the definition of a new 'digital enlightenment' and draws an
epistemological–political project aimed at making knowledge creation operations
transparent for the community of researchers in the social sciences and humanities.
Tim Luke examines 'Perversity or Problems in The Rise of Peer Production: Colle-
giality, Collaboration, and Collective Intelligence', and maps some problems arising
from the historical contradictions between 'knowledge socialism' and 'knowledge
capitalism'. In 'Postdigital Knowledge Socialism', Petar Jandrić historicizes Peters'
concept of knowledge socialism, situates it in the wider postdigital context and warns
against repeating some well-known errors made by earlier generations of leftist
scholars and practitioners. Finally, in 'General stupidity as a missing component
of general intellect', Derek Ford re-examines the general intellect in order to develop
a communist theory of writing which is more interested in the character of the act of
rewriting, than in the content of writing.

The Challenge of Political Economy

In 'Knowledge socialism purged of Marx: the return of organized capitalism', Steve
Fuller argues that contemporary political economy of knowledge socialism needs
to bury its Marxist heritage and focus to various 'utopian socialist' theories from
Saint-Simon to Proudhon underlined by the Popperian tradition in the philosophy
of science. In 'Knowledge socialism and a post-neoliberal model of development',
David Neilson offers a democratic socialist critique of Hardin's 'Tragedy of the
Commons' and links 'cosmopolitan democracy' with a 'world knowledge bank' as
key features of a democratic socialist alternative to the neoliberal model of devel-
opment. Mark Olssen and his 'The Rehabilitation of the Concept of Public Good:
reappraising the attacks from liberalism and neoliberalism from a poststructuralist
perspective' consider three twentieth-century attacks of the idea of the public good:
from Social Choice Theory, from Public Choice Theory, and from twentieth-century
political liberalism. In 'Going Public: Higher Education and the Democratization of
Knowledge', Sharon Rider reaches further into the fundamentally public nature of
knowledge and discusses the distribution of knowledge through the public exchange
of ideas with an eye toward rethinking contemporary higher education as a democratic
enterprise.

Education for Knowledge Socialism

Ronald Barnett's 'The University and Knowledge Socialism: a strange juxtaposition'
argues that the university and knowledge socialism constitute an odd couple; a couple
with various tensions between them. In 'The prospects for knowledge socialism in
one country?', John Morgan traces the sources of failure of British 'educational left'

to convincingly propose alternatives to the conservative educational discourse of the past forty years in his analyses of five distinctive strands of 'left' educational thought. Greg Misiaszek's 'Locating and diversifying modernity: Deconstructing knowledges to counter development for a few' uses the framings of knowledge socialism to problematize the relationships between education and 'development'. Dawn Bothwell and Paul Alexander Stewart's 'The reality of knowledge through the critique of art: collective digital tools and transgressing capital' considers knowledge socialism in relation to the production of the self in the digital age and adds a valuable artistic perspective to the volume.

Some Preliminary Implications

This book's contributors tore Peters' idea of knowledge socialism into pieces, carefully analyzed each piece and then re-assembled analyzed pieces into something (at least slightly) different from Peters' original proposal. Authors used historical parallels, developed thought experiments, offered administrative and/or technical solutions, and engaged in other techniques of speculation. Peters' theory has endured this heavy barrage surprisingly well, and after almost two years of working on this edited volume, we feel that the concept of knowledge socialism has made a strong leap forward. We now know which parts of theory cause the most confusion, which parts of theory seem the least problematic and which aspects of practice require our dedicated attention.

Two decades ago, the first contours of knowledge socialism emerged in Michael Peters' mind. In interaction with his close circle of friends, Peters has developed this idea over multiple publications and contexts. However, it is only with this volume that the idea of knowledge socialism has reached beyond Peters' (admittedly incredibly wide) circle and has entered scientific mainstream. *Knowledge Socialism. The Rise of Peer Production: Collegiality, Collaboration, and Collective Intelligence* marks the end of the pioneering phase of knowledge socialism and offers foundations for in-depth, systematic studies in the field. Peters' theory has now grown up, and this book has launched it into the quest for pastures new and unexplored.

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Michael A. Peters is Distinguished Professor of Education at Beijing Normal University Faculty of Education PRC, and Emeritus Professor at the University of Illinois at Urbana–Champaign. He is the executive editor of *Educational Philosophy and Theory* and founding editor of ten international journals. His interests are in philosophy and education and he has written over one hundred and twenty books, including several books on Wittgenstein. He was made an Honorary Fellow of the Royal Society of NZ in 2010 and awarded honorary doctorates by State University of New York (SUNY) in 2012 and University of Aalborg in 2015. His recently published book is *Wittgenstein, Antifoundationalism, Technoscience and Philosophy of Education* (2020).

Tina Besley is Distinguished Professor of Education at Beijing Normal University Faculty of Education PRC, and past President of the Philosophy of Education Society of Australasia and the Association of Visual Pedagogies. She is Deputy Editor of *Educational Philosophy and Theory* and the author twelve books and many articles.

Petar Jandrić is Professor at the Zagreb University of Applied Sciences, Croatia and Visiting Professor at University of Wolverhampton, UK. His previous academic affiliations include Croatian Academic and Research Network, National e-Science Center at the University of Edinburgh, Glasgow School of Art, and Cass School of Education at the University of East London. Petar's

background is in physics, education and information science, and his research interests are situated at the post-disciplinary intersections between technologies, pedagogies and the society, and research methodologies of his choice are inter-, trans-, and anti-disciplinarity. He is Editor-in-Chief of *Postdigital Science and Education* journal and book series. Personal Web site: http://petarjandric.com/.

Xudong Zhu is Professor and General Secretary of Teacher Education Experts Committee of Ministry of Education (MOE), Dean of Faculty of Education at Beijing Normal University, Director of the Center for Teacher Education Research (CTER), Vice-General Secretary and Executive Director of the National Teacher Education Society, one of the Social Sciences Hundred Engineering People in the New Century in Beijing, participant in the first batch of 'A Group of Four' Talents in Beijing, and a senior visiting scholar of Fulbright Program at University of Maryland. Prof. Zhu's areas of research include Teacher Education, Comparative Education, Foreign Education History and others. He has published more than ten books, eighty papers and has edited four series.

Part I
Peer Production and Collective Intelligence

Chapter 2
Towards a Theory of Knowledge Socialism: Cognitive Capitalism and the Fourth Knowledge Revolution

Michael A. Peters

Introduction: Re-visiting the Neoliberal Knowledge Economy

In a world where income is being decoupled from education and work, and neoliberal capitalism has led to an increasing concentration of wealth (Piketty 2014), it is likely that social and educational inequalities will accelerate and proliferate when equality and excellence dominate Western educational policy agendas. Peter and Bröckling (2017) argue that equality and excellence constitute the hegemonic discourses of 'economisation' within the German education system, a thesis that has useful applications to education systems elsewhere. Equality of opportunity is increasingly seen in neoliberal terms as that designed to utilise the full limits of human capital. In higher education, 'excellence' serves to introduce a logic of competition for educating the elite. Peter and Bröckling (2017) adopt a theoretical approach from Foucault's governmentiality and Luhmann's systems theory to discuss how mechanisms of exclusion and inclusion operate in schooling and university education sectors. As they suggest:

> Equality and excellence appear, at least superficially, as opposing and mutually exclusive orientations; one either supports the promotion of the elite and a competitive understanding of education, or one supports collective learning and the equal right to education for all - *tertium non datur*. (Peter and Bröckling 2017) (italics from the original)

They trace these antagonisms to a basic model of rationality that drives the global educational discourse where discourses of excellence and equality get cashed out in neoliberal market terms and can be understood in by reference to neoliberal governmentiality. Specifically, embracing political discourse theory they argue: 'equality and excellence represent models for two opposing hegemonic projects in

M. A. Peters (✉)
Beijing Normal University, Beijing, China
e-mail: mpeters@bnu.edu.cn

the German education system, which nonetheless meet within a transnational framework of economic competition'. They demonstrate how the mobilisation of a concept of excellence is anchored in the qualitative improvement of education seen as human capital and learning for the 'information age' and how education has become decisive for competitiveness in a world where 'productivity is based on the creation, distribution and use of knowledge'.

The economisation of education has taken place through the progressive amalgamation of discourse threads to form the 'knowledge economy' based on new endogenous growth theory developed by Romer and others in the 1990s and adopted and popularised by the OECD soon after. The OECD's formulation became the dominant neoliberal discourse that blended elements from earlier management, sociological, and economic studies and recast education, effectively, from a welfare right concerned with equality of opportunity to the central theory of human capital development. As neoliberal policies followed notions of school choice, vouchers and privatisation with the marketisation of education, the liberal rhetoric of equality of opportunity faded away, surviving intact only at the primary school level. In the hard-core neoliberal states, the educational inequalities soon began to increase under system that decentralised state control and decision making to the local level in a form of institutional autonomy that had the effect of benefitting schools from 'rich' areas and diminishing those from 'poor' areas.

I have been interested in Foucault's reading of neoliberalism and its application to discourses of the knowledge economy for some years now. In 2001, I published a paper that reviewed and critiqued national education policy constructions of the knowledge economy (Peters 2001). Referencing the post-war consensus that increasing emerged with the likes of economists, futurists, and sociologists, different threads of a *blended* discourse by Drucker, Machlup, Porter and Thurow, I charted the ruling paradigm the economics and productivity of knowledge had become the only source of comparative advantage commenting that many western governments had begun the process of restructuring their national education systems and redesigning the interface between universities and business-based neoliberal theories of human capital, public choice, and new public management.

In this context, I made reference to the discourse of the 'future of work' citing Charles Handy's work in the 1980s to signal the end of full employment and the redesign of education to cope with increased job mobility and multiple careers. By 'knowledge economy', I stressed the main characteristics of received mainstream discourse that focused on (1) economics of abundance; (2) the annihilation of distance; (3) the de-territorialisation of the state; (4) the importance of local knowledge; and (5) investment in human capital. In the following section, I teased out several separate discourses from economics, management theory, futurology and sociology can be identified as having contributed to shaping the present policy narrative of the 'knowledge economy' including: The economics of information and knowledge (Marschak, Machlup, Becker, Friedman, Buchanan and Tullock, Romer); New management theory and knowledge managerialism; Sociology of the

labour process; Sociology of knowledge and education; Futurology, futures research, forecasting, foresight studies; and, Communications and information technology theory.

I suggested that these are clearly disparate disciplines 'fields and discourses that operate with different assumptions, employ different methodologies and reach different and sometimes opposing conclusions. The art of policy scholarship is intended, in part, to gain awareness of these different strands as they influence policy narratives, to disentangle them and comment upon inconsistencies.' (Peters 2001) These discourses came from across the political spectrum and the blended discourse often represented wholesale conceptual 'borrowings' without proper attributions.

In the rest of the paper, I attempted to define the discourse of the knowledge economy by investigating three examples of national policy constructions in the UK, Scotland, and NZ, all of which were strong examples of policy discourses aimed at the economisation of education. In the final section and in those early days, I made clear that I was not in principle against the concept of the knowledge economy at least as it fits within the social democratic tradition that posits an economy as subordinate to the state and the question of sovereignty. I argued the notion of the 'knowledge society' provides grounds for both the *reinvention of education as a welfare right* and the recognition of knowledge rights as a basis for social inclusion and informed citizenship. This view can be contrasted with that of the 'knowledge economy' as simply an ideological extension of the neoliberal paradigm of globalisation, where the term stands for a 'stripped down' functionalist view of education in service of the multinational information capital. I was influenced by Stiglitz's argument for knowledge as a *global public good*—a discourse that appeared at the end of the 1990s. In my critique, I challenged the easy accommodation between 'knowledge' and 'information' and returned to the question of employment and 'knowledge workers' by reference to Rifkin's (1998) 'end of work' analysis of the US economy and the threat of automation in the shift from industrial to knowledge capitalism transforming the West into 'workless worlds', where only an elite technical labour force will find jobs.

If you remember, Rifkin's educational solution was to expand education's role in civil society as an arena for job creation and social-service provision in the coming century. I made reference to André Gorz and indicated that '[i]n the Hegelian and Marxist senses, the nature of work is tied up not only with "practico- sensory activity", but with *poiesis* and self-creation' (Peters 2001: 16) (italics from the original). Returning to Foucault, I emphasised how the formation, circulation and utilisation of knowledge in the late twentieth century had become a fundamental problem and followed Foucault who compared the accumulation of knowledge to that of capital (in nineteenth century capitalism). He asserted that at this juncture—in the age of the knowledge economy—it is now impossible to pursue the question of knowledge separately from the question of capital. Surely this early statement by Foucault made in conversation with the Italian Marxist Duccio Trombadori in 1978 is an instantiation of his concept of power-knowledge (*le savoir-pouvoir*): modern power is based knowledge and reproduces it; both share dynamic and unstable systemic characteristics as relational, ubiquitous, and productive (Foucault 1980). The central

feature of political economy in the twentieth century was the formation, circulation, and utilisation of knowledge rather than that of capital and its dialectic of capital-labour. Through his later studies of neoliberalism, Foucault foresaw the importance of the centrality of knowledge for radical political economy and indicated a pathway to understand the further 'technologicisation' of an emerging single interconnected planetary system of global knowledge for the first time in human history.

That paper was published over eighteen years ago and has been well cited (over 250 times). Now it is old hat. Over the intervening years, I have followed through on many of these themes in a variety of papers and books that extend and depart from the original arguments, emphasising my concerns for technological unemployment, especially as regards youth and searching for viable social democratic alternatives. In subsequent work, I have employed an approach using Foucault's work on neoliberal governmentality. Foucault gave his famous lectures on neoliberalism as a form of biopolitics in 1979 just as Margaret Thatcher came to power, focusing on Becker and human capital theory as the most advanced form of neoliberalism. Foucault died in 1984 and capitalism has kept on changing, teetering from one crisis to another—the crisis of productivity, the global financial crisis of 2008, the crisis of political legitimation following the socialisation of bank failures and austerity politics. Foucault, it might be observed, did not have much to say about capitalism per se as an international system accept except through glancing comments and his interpretation of neoliberalism—nevertheless, a major contribution. Certainly, Foucault did not anticipate the formalisation, mathematicisation, and compression that took place under processes of financialisation in what I have termed 'algorithmic capitalism,' sometimes also referred to as 'platform capitalism' or 'high frequency trading' (Peters 2017a, b), nor did he envisage the development of the concept of 'cognitive capitalism' based on his work and Marx's 'Fragment of Machines' that with the autonomist school in Italy under Negri, Virno and Lazzarato. I have attempted to develop this attempt to marry Marx and Foucault in the field of education by focusing on the question of digital labour (Peters and Bulut 2011).

The Discourse of Cognitive Capitalism

Cognitive capitalism is the culmination and most systematic statement to date of the Italian *autonomista* of an outline of an economic theory of a form of capitalism superceding industrial capitalism. Boutang (2012) working with his colleagues in Paris around the journal, he established in 2012 called *Multitudes*, build on the work Antonio Negri, Paolo Virno, Christian Marazzi, Andrea Fumagalli, and others in the Italian autonomist school to focus on cognitive and 'immaterial' labour (Lazzarato 1996), after Marx's 'Fragment on Machines' (in Marx 1978). Theorists of cognitive capitalism claim that a fundamental shift occurs in capitalism based on physical resources to knowledge and brain power as both input and output, signalling a break with Fordism and a historically new stage of capitalism. *Postoperaismo* is

an empirical based understanding of changes in production and the shift to 'immaterial labour' characterises the growing significance of the service sector, creative industries, and so-called knowledge economy. Pitts paints what now seems a familiar scenario based on this interpretation (in order to contest this reading suggesting it overlooks the persistence of social relations):

> The 'Fragment on Machines' (1973, 704-706) is a small section of his *Grundrisse*, the notebooks for what would later become Capital (1976). In it, Marx presents a future scenario where the use of machines and knowledge in production expands. Production revolves more around knowledge than physical effort. Machines liberate humans from labour, and the role of direct labour time in life shrinks to a minimum. Free time proliferates. The divorce of labour time from exchange value sparks capitalist crisis. But this technological leap brings about the possibility of a social development on a massive scale. Freed from physical subordination to the means of production, workers grow intellectually and cooperatively. This freely generated 'general intellect' reinserts itself, uncoerced, into production as fixed capital. The worker is incorporated only at a distance, rather than as a constituent part of the capital relation. The potential for an incipient communism arises. (Pitts 2017: 4)

I have no difficulty in holding with advocates of *postoperaismo* that 'the technological leap' may lead to 'social development' and even to a kind of 'socialisation of thought' but I have difficulty in accepting that this socialisation all points the same way or that it leads to the potential for communism based on 'freely-generated general intellect' especially when in face of technological unemployment, the notion of 'worker' and 'labour' is radically redefined.

If we accept the shift at face value, it highlights significant consequences for education and digital labour (Peters and Bulut 2011) and for the future shape of a sharing and participative economy based on education and learning considered in the broadest sense. At the same time, deep learning has come of age (developing well after *postoperaismo*). The rapid development of machines that can learn without explicit program instruction have experienced accelerated success in the last five years surpassing technical expectations. In combination with 'big data' analytics, deep learning perhaps best represented in Google's DeepMind and IBM's 'Watson', has defeated the best international chess and go players and make an unsurpassed contribution to cancer research (Peters 2017a, b). Deep learning, a branch of artificial intelligence, threatens to accelerate the automation of work and the concomitant process of technological unemployment at a time in contemporary history when youth employment has reached record post-war levels. A frequently cited Oxford study drawing upon recent advances in machine learning (ML) and mobile robotics (MR) estimates that 45 per cent of America's occupations will be automated within the next 20 years (Frey and Osborne 2017). In a world where income is being decoupled from education and work, and neoliberal capitalism has led to an increasing concentration of wealth (Piketty 2014), it is likely that social and educational inequalities will accelerate and proliferate when equality and excellence dominate Western educational policy agendas.

There have been many attempts in the post-war era to characterise the future of capitalism from sociological work focused on postindustrialism as both a critique of industrialism and a prediction of economic shifts based on the centrality of theoretical knowledge (e.g. Bell, Touraine, Toffler) to more recent conceptualisations of

the 'information' (e.g. Porat) and 'knowledge economy' (e.g. Drucker, Machlup, Romer). 'Cognitive capitalism' (CC) is a Marxist-inspired critique of the knowledge economy that has a debt to endogenous growth theory. This paradigm or hypothesis focuses on how the shift to knowledge as a factor of production and its characterisation in terms of cognitive activity transforms the labour/capital relationship. CC draws our attention to labour-process models that technologically extend human communication and realise the creation of value through the production of knowledge and other symbolic goods, increasingly organised in terms of large data networks.

I have pursued this topic in a number of publications on 'knowledge capitalism' (Peters and Besley 2006), 'knowledge socialism' (Peters 2004), the 'creative economy' (Araya and Peters 2010; Peters et al. 2009), 'cognitive capitalism' (Peters and Bulut 2011), 'open knowledge' and 'open science economy' (Peters 2009), 'financialisation' and 'finance capitalism' (Peters and Besley 2013) and 'radical openness' (Peters 2014a, b; Peters and Jandrić 2018a, b) that tries to develop an explicit recognition of the ways in which these shifts and forces reconfigure education at all levels at the centre of the knowledge economy and labour increasingly as the source of creative value. This is the kind of description I offered in my edited book with Ergin Bulut, *Cognitive Capitalism, Education and the Question of Digital Labour*:

> 'Cognitive capitalism' is a general term that has become significant in the discourse analysing a new form of capitalism sometimes called the third phase of capitalism, after the earlier phases of mercantile and industrial capitalism, where the accumulation process is centred on immaterial assets utilising immaterial or digital labour processes and production of symbolic goods and experiences. It is a term that focuses on the socio-economic changes ushered in with the Internet as platform and new Web 2.0 technologies that have impacted the mode of production and the nature of labour.

> The core of cognitive capitalism is centred on digital labour processes that produce digital products cheaply utilising new information and communications technologies that are protected through intellectual property rights regimes which are increasingly subjected to interventions and negotiations of the nation states around the world. (Peters and Bulut 2011)

I am not concerned to defend this notion here, nor to comment on its Marxist origins and sometimes heavily romantic versions that lay stress on processes of collective intelligence, open science, and social innovation all of which I have indicated as ways to reclaim the public dimensions of knowledge (e.g. Peters 2013a, b). Neither am I concerned to acknowledge the ways in which CC underplayed the cultural dimension or the relational and affective aspects of the new capitalism (Peters 2019). In this paper, I want mainly to comment on the relation of CC to what I call 'the epoch of digital reason' (Peters 2016) and, in particular, the critical relationship between 'deep learning' and what is called 'technological unemployment' (Peters et al. 2019).

If the infinite substitution of labour is the driving motif of the transformation of labour in the shift from industrial to postindustrial forms of capitalism with its waves of automation based on robotisation, then 'deep learning' can be considered the key metaphor in the transformation of knowledge into data and information, and machine learning that can augment and replace human knowledge production systems with

algorithms and large data sets. We might say that the infinite substitution principle of labour first into mechanised assembly plants and later robot manufacturing, duplicates the process for mental labour especially in the digital realm. In short, what is the impact of artificial intelligence on employment? The current anxiety seems well placed and we have been warned about the 'jobless future' not just for routine manual and cognitive jobs but also for non-routine 'creative' and highly skilled jobs.

The empirical analysis reveals a more complex picture where AI automation redefines employment and may even create some jobs. Autonomous vehicle or driverless cars may in fact disestablish many job types in transport while creating a few to cope with accidents and emergencies. Certainly, the scale and rate of job creation will be affected. More importantly, automation and the generalised 'decline of labour' seem to pose huge questions for education, labour politics, unions, and welfare. Capital no longer needs labour in the way it required the mass of unskilled labour, even at offshore cheap rates, that characterised early stages of industrial capitalism or its globalisation in the post-war period as jobs migrated East. Even skilled tasks now can be handled by robots at diminishing cost levels at 24/7 fully automated plants. We saw second wave automation of the service sector in the 1980s when white collar office jobs began disappearing and the ATM machine was first introduced in 1969 as part of the early process of financialisation. The digitisation of finance that among other things led to the automation of equity markets and the phenomenon of high-frequency trading represented a third wave automation associated with global finance capitalism coming to fruition in the early 2000s. The fourth wave automation of knowledge and research develop quickly with the growth of 'platform capitalism', the rise of algorithmic-based knowledge capitalism with the rise of search, big publishing, and metrics industries. Deep learning as an aspect of AI that has recently experienced a period of accelerated development and break-through technologies are the latest phase of automation that has the capacity to automate and augment human cognition.[1]

Deep Learning and the Final Stage of Automation

Goodfellow et al. (2016) who wrote the first textbook on deep learning, comment: 'The true challenge to artificial intelligence proved to be solving the tasks that are easy for people to perform but hard for people to describe formally—problems that we solve intuitively, that feel automatic, like recognising spoken words or faces in images.' Their solution is

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[1]A special report in The Economist in 2016 treats this as a question for the *delivery* of education through MOOCs and new 'adaptive-learning' start-ups in order to create AI learning systems that are more personalised, flexible, inclusive, and engaging. See http://www.economist.com/news/special-report/21700760-artificial-intelligence-will-have-implications-policymakers-education-welfare-and. Accessed 1 August 2020.

to allow computers to learn from experience and understand the world in terms of a hierarchy of concepts, with each concept defined in terms of its relation to simpler concepts. By gathering knowledge from experience, this approach avoids the need for human operators to formally specify all of the knowledge that the computer needs. The hierarchy of concepts allows the computer to learn complicated concepts by building them out of simpler ones. (Goodfellow et al. 2016)

Goodfellow, Bengio, and Courville identify three waves of development of deep learning: deep learning known as cybernetics in the 1940s–1960s appeared with biological theories of learning; deep learning known as connectionism in the 1980s–1990s that used 'back-propagation' to train neural network with multiple layers, and the current resurgence under the name deep learning beginning in 2006 and only appearing in book form in 2016. They argue that the current deep learning approach to AI goes beyond the neuroscientific perspective applying 'machine learning frameworks that are not necessarily neurally inspired'. Deep learning, then, is 'a type of machine learning, a technique that allows computer systems to improve with experience and data' (Goodfellow et al. 2016).

Morris et al. (2017) report on the remarkable 'take-off' of artificial intelligence and with the resurgence also the return of the *machinery question* posed almost 200 years ago in the context of the Industrial Revolution. They note the upbeat analysis of mainstream press in 2016 and document the publication of several US and UK reports that suggest not only that 'AI has arrived' but also offers 'huge potential for more efficient and effective business and government.[2] The economists cited welcome AI for productivity gains. They ask '[w]hat triggered this remarkable resurgence of AI?' and they answer:

All evidence points to an interesting convergence of recent advances in machine learning (ML), big data, and graphics processing units (GPUs). A particular aspect of ML—called deep learning using artificial neural networks—received a hardware boost a few years ago from GPUs, which made the supervised learning from large amounts of visual data practical. (Morris et al. 2017: 407)

The popularity of ML, they note, has been enhanced by machines out-performing human in areas taken to be prime examples of human intelligence: 'In 1997, IBM's Deep Blue beat Garry Kasparov in chess, and in 2011, IBM's Watson won against two of Jeopardy's greatest champions. More recently, in March 2016, Google's AlphaGo defeated Lee Sedol, one of the best players in the game of Go' (Morris et al. 2017: 407). Following this popular success, as Morris et al. (2017) note the private sector took up the challenge. They note, in particular, that IBM developed its cognitive computing in the form of their system called Watson, a DeepQA system capable of answering questions in a natural language.[3] The Watson website[4] makes the

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[2]See 'Artificial intelligence: opportunities and implications for the future of decision making' G.S.O., https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/566075/gs-16-19-artificial-intelligence-ai-report.pdf . Accessed 1 August 2020.

[3]See David Ferrucci, Dan Cerutti and Ken Jennings on IBM's Watson at Singularity Summit 2011, https://www.youtube.com/watch?v=oFMeBId7vIM. Accessed 1 August 2020.

[4]See https://www.ibm.com/watson/. Accessed 1 August 2020.

following claim: 'Watson can understand all forms of data, interact naturally with people, and learn and reason, at scale.' And it also talks of 'transforming learning experience with Watson' taking personalised learning to a new level: 'We are transforming the learning experience through personalisation. Cognitive solutions that understand, reason and learn help educators gain insights into learning styles, preferences, and aptitude of every student. The results are holistic learning paths, for every learner, through their lifelong learning journey.'

Already firms are talking about transforming the learning experience through personalisation with purported 'cognitive solutions' that understand, reason, and learn help educators gain insights into individual student learning styles and preferences. IBM's Watson Enlight[5] is a planning tool to support teachers with curated, personalised learning content, and activities to align with each student's needs. The IBM Whitepaper (2016) claims that '[d]ata-driven cognitive technologies will enable personalised education and improve outcomes for students, educators and administrators'.[6] Another prominent example is DeepMind that advertises itself in terms of artificial intelligence research 'developing programs that can learn to solve any complex problem without needing to be taught how'.[7] One of the current developments focuses on the realm beyond *automation* to explore the advanced engineering of *autonomous systems* already is exploring how these systems will learn to adapt to new and unforeseen circumstances.

In terms of the labour market US experts are split between whether AI will displace more jobs than it creates with evidence suggesting that any jobs created will be those in STEM that complements AI. Lee (2016), a top White House science advisor, estimates that automated vehicles could threaten or alter 2.2 million to 3.1 million existing US jobs. As Obama claimed before the recent US election: 'The next wave of economic dislocations won't come from over- seas. It will come from the relentless pace of automation that makes a lot of good middle-class jobs obsolete.' (in Rotman 2016: 92) It is clear that the comparative advantage of human forms of labour will be eroded as ML and deep learning systems become more sophisticated and more intelligent taking over and/or augmenting jobs in libraries, research, teaching, law and other tertiary sector and creative forms of employment that require a learning component and have previously been seen to be impervious to automation. In particular, the widespread development for 'cognitive computing', deep learning, and autonomous learning systems through applications and by start-ups strikes at the very heart of the so-called 'knowledge economy', or 'cognitive capitalism' where such systems are already able to augment and, in some cases, replace jobs in the engine room of 'knowledge capitalism'.

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[5]See https://www.ibm.com/watson/education. Accessed 1 August 2020.

[6]See   https://public.dhe.ibm.com/common/ssi/ecm/ed/en/edw03008gben/EDW03008G
BEN.PDF. Accessed 1 August 2020.

[7]See https://deepmind.com/about. Accessed 1 August 2020.

The autonomous learning systems of AI, increasingly referred to as *deep learning* theoretically has the capacity to introduce autonomy into machine learning with the same dramatic impact that mechanisation had first in agriculture with the creation of industrial labour force and massive rural–urban migration that built the mega-cities of today. Fordist automation that utilised technologies of numerical control (NC), continuous process production, and the production processes using modern information technology (IT) introduced the system of mass production and later, the 'flexible system of production' based on the Japanese management principles. When Fordism came to a crisis in the 1960s with declining productivity levels where Taylorist organisational forms of labour reached its limits, the search for greater flexibility diversified into new forms of automation especially as financialisation took hold in the 2000s and high-frequency trading ensued on the basis of platforms of mathematical modelling and algorithmic engines (Peters et al. 2011; Peters 2012, 2013a, b, 2017a). These changes were developing since the 1960s with the invention of the credit card and the eventual automation of equity markets. This too-simple analysis that paints a broad picture of the dynamic changes of knowledge capitalism suggests a sequential or stage-related set of changes in automation of production, of economy and of labour. I do not use the term post-Fordism in this context because of its inherent analytical weakness (Vidal 2011).

In an interesting edited collection, *Alleys of the Mind: Augmented Intelligence and Its Traumas* Matteo Pasquinelli (2016a: 7) foregrounds 'the reason of trauma' as a search for positive definitions of 'error, abnormality, trauma, and catastrophe—a set of concepts that need to be understood in their cognitive, technological and political composition'. Pasquinelli (2016a: 7) goes on to elaborate the philosophical context of segmented intelligence by reference to Foucault, Deleuze, *and* the Frankfurt on the *instrumentalisation of reason.* It may be surprising for some to find out that Foucault's history of biopower and technologies of the self-share common roots with cybernetics and its early error-friendly universal machines. Or to learn that the desiring machines, which 'continually break down as they run, and in fact run only when they are not functioning properly' (Deleuze and Guattari 1983: 8), were in fact echoing research on war traumas and brain plasticity from the First World War. Across the history of computation (from early cybernetics to artificial intelligence and current algorithmic capitalism), both mainstream technology and critical responses to it have shared a common belief in the determinism and positivism of the *instrumental* or *technological rationality,* to use the formulations of the Frankfurt School (Horkheimer 1947; Marcuse 1964).

Pasquinelli's 'Keyword: Augmented Intelligence', offered as an afterword for the collection makes clear the connection and synonyms, and the intellectual work that needs to be done in order to get a grip on this concept:

Synonyms include: augmented human intellect, machine augmented intelligence, and intelligence amplification. Specifically, extended mind, extended cognition, externalism, distributed cognition, and the social brain are concepts of cognitive sciences and philosophy of mind that do not necessarily involve technology (Clark and Chalmers 1998). Augmented reality, virtual reality, and teleoperation can be framed as a form of augmented intelligence, moreover, for their novel in uence on cognition. Brain-computer interfaces directly record

electromagnetic impulses of neural substrates to control, for instance, external devices like a robotic arm, and raise issues of the *exo-self* and *exo-body*. (Pasquinelli 2016b: 2003)

I find the theoretical recourse to the history of modern cybernetics that characterises the collection both useful and instructive as means of viewing 'algorithmic capitalism'—a term I have used myself (Peters 2012, 2013a, b, 2017a, b). Stiegler's (2010) *For a New Critique of Political Economy* here is apposite and challenging when he argues that machines have confiscated the knowledge and memories of knowledge workers such that proletarianisation now encompasses not only the muscular system (Marx) but also the nervous system of the so-called creative workers in the knowledge economy. I found essay by Wheeler (2016) 'Thinking Beyond the Brain: Educating and Building from the Standpoint of Extended Cognition' and Luciana Parisi (2016) 'Instrumental Reason, Algorithmic Capitalism, and the Incomputable' particularly useful for the purposes of this essay.

My fear and I think it is well founded is not only of a 'final' stage of automation that takes place with the development of machine and deep learning that at least theoretically threatens 'technological unemployment' but also that an even more savage set of emerging inequalities will ensue. These growing inequalities seem likely to be focused on deepening youth unemployment and inequalities in educational opportunity that became pronounced under financialisation of education, the trillion-dollar blow-out in US student loans and austerity capitalism after the Great Recession, especially in the Mediterranean economies. In this new space of deep learning and its effects on university-based research and knowledge workers, human capital arguments seem old-fashioned and limp although the innovation side of endogenous growth theory may still hold. 'End of work' and 'future of work' discourse as Caffentzis notes has witnessed a return 'reminiscent of the mid-1970s, but with a number of twists':

> In the earlier period, books like *Where Have All the Robots Gone? False Promises* (Aronowitz 1973) and *Work in America*, and phrases like 'blue collar blues,' 'zerowork' and 'the refusal of work' revealed a crisis of the assembly line worker which expressed itself most dramatically in wildcat strikes in U.S. auto factories in 1973 and 1974 (Linebaugh and Ramirez 1992)…
>
> But in the mid-1990s books like *The End of Work* (Rifkin 1995), *The Labour of Dionysius* and *The Jobless Future* (Aronowitz and De Fazio 1994), and phrases like 'downsizing' and 'worker displacement' (Moore 1996) have revived themes associated with the crisis of work at a time when the power relation between workers and capital is the inverse of the 1970s. Whereas in the 1970s workers were refusing work, in the 1990s capitalists presumably are refusing workers! (Caffentzis 1999: 20) (italics from the original)

Caffentzis concludes:

> Negri and Rifkin are major participants in the 'end of work' discourse of the 1990s, although they occupy two ends of the rhetorical spectrum. Rifkin is empirical and pessimistic in his assessment of the 'end of work' while Negri is aprioristic and optimistic. However, both seem to invoke technological determinism by claiming that there is only one way for capitalism to develop. (Caffentzis 1999: 35)

A working hypothesis and a dark scenario is that in an age of deep learning—the final stage of automation—the welfare state based on full employment, might

seem a quaint and romantic past when labour, withdrawal of labour, and labour politics went together and had some force in an industrial age. In retrospect and from the perspective of algorithmic capitalism in full swing, the welfare state and full employment may seem like a mere historical aberration.

Algorithmic Capitalism in the Epoch of Digital Reason

In my work, I have become more interested in the question of education and digital labour in what I call the 'epoch of digital reason' in order to explore the basis for knowledge socialism rather than knowledge capitalism. Cognitive capitalism seemed to me to offer an alternative and opposing account of knowledge capitalism, and the notion of 'creative labour' provided an interesting alternative description to 'human capital'. In this connection, I have explored, in particular, the wider philosophy and political economy of openness and open knowledge production with a strong emphasis on 'radical openness' and new forms of 'co(labor)ation'. After completing my PhD thesis in 1984 on the problem of rationality in Wittgenstein, I was drawn to the work of Lyotard, Foucault, and Derrida and published works that explored a poststructuralist interpretation of Marxism and analysed education as a form of knowledge capitalism (e.g. Peters 2001, 2003). In later work, I was captured by the promise of the 'paradigm of openness' and became interested in all forms of openness as it represented a moment of collective intelligence in science and education (e.g. Peters and Roberts 2013; Peters 2013a, b). In a significant paper for my own thinking I outlined three forms and associated discourses of the 'knowledge economy': the 'learning economy', based on the work of Bengt-Åke Lundvall; the 'creative economy' based on the work of Charles Landry, John Howkins, and Richard Florida; and the 'open knowledge economy' based on the work of Yochai Benkler and others. I argued that these three forms (and discourses) represented three recent related but different conceptions of the knowledge economy, each with clear significance and implications for education and education policy, with the last providing a model of radically non-propertarian form that incorporates both 'open education' and 'open science' economies (Peters 2010). I have been seeking a social democratic alternative to constructions of the neoliberal knowledge economy that respects the collective and public dimensions of knowledge as a symbolic social good. In retrospect, I understand that I have been trying to subvert the discourse and have been trying in my own way to expand and experiment with the concept.

I became less satisfied with the concept of knowledge economy and sought a form of radical political economy in poststructuralist philosophy that had been a tendency in my early work. A major long-term historical tendency of capitalism not mentioned by Foucault because it only became evident in the years after his death, as I mentioned, is the dominance of finance culture and financialisation based on the increasing formalisation, mathematicisation, and automation of finance markets (Peters et al. 2015). This development that grew out of long-term developments in algebra and the algebrafication of logic, has increased the algorithmic governance and the growing

prominence of big data informationalism. It indicated the close connection between information and market in a pronounced development of 'knowledge capitalism' that became increasingly more abstract and mathematic. It developed first in capital market applications and in the extension of world global finance markets and then in science and education through the application of search engines and online networks. I used the term 'bioinformational capitalism' in an echo of Foucault to describe and analyse the merging of two broad technological forces of contemporary capitalism: informational capitalism based on the rise of digital technologies on the one hand, and the new biology and biotech, on the other, that has created new life and, therefore, become able to renew its own material base (Peters 2012). These two major forces—the digital and the biological—are now inextricably entwined (the biologisation of information and the informatisation of biology) and represent a vector of critical convergence within the postdigital (Peters and Besley 2019).

Increasingly, I sought to understand the contours of what I called 'the epoch of digital reason' in relation to AI, deep learning, and 'algorithmic capitalism' (Peters and Jandrić 2015, 2018a, b; Peters 2017a, b; Peters and Besley 2019). In 'Critical Philosophy of the Postdigital' working with Tina Besley, we drew on our recent works on cybernetics, complexity theory, quantum computing, artificial intelligence (AI), deep learning, and algorithmic capitalism to bring these ideas together to develop a *critical* philosophy of the postdigital based on an understanding of quantum computing (QC) which is based on quantum mechanics and offers a radically different approach from classical computing based on classical mechanics. Cybernetics, and complexity theory, provide insight into systems that are too complex to predict their future. Artificial intelligence and deep learning are promising the final stage of automation which is not compatible with the welfare state based on full employment.

We have thus arrived into the age of algorithmic capitalism, and its current phase, 'biologization of digital reason', is a distinct phenomenon that is at an early emergent form that springs from the application of digital reason to biology and the biologization of digital processes. Rejecting a fully mechanical universe, therefore, a critical pedagogy of the postdigital is closely related to Whitehead's process philosophy, which is a form of speculative metaphysics that privileges the event and processes over and above substance. A critical philosophy of the postdigital is dialectically interrelated with the theories such as cybernetics and complexity theory, and also processes such as quantum computing, complexity science, and deep learning. These processes constitute the emerging techno-science global system, perpetuating algorithmic capitalism, and the prospect of the application of 'intelligent publishing' in knowledge capitalism where machine learning also means 'machine writing' and AI applied to research can operate entirely without human beings to discover deep configurations in big data science.

This is the fourth knowledge revolution, following Schwab's (2017) *Fourth Industrial Revolution*, even though I have misgivings about the ways in which this view is somewhat deterministic and technology-driven. The notion clearly requires more theoretical work. Am I optimistic about the prospects of openness or of 'digital

socialism'? I am warier and more sceptical than I was a decade ago about the opportunities for knowledge socialism especially in view of algorithmic capitalism, although there are still opportunities for full public knowledge, learning and publishing platforms that are, if not owned by the State, at least strongly regulated in the interests of public good science. Such public platforms are not obliged to return big profits from the mass personal data that the now soon to be trillion-dollar information utilities harvest from their users on a daily basis. Perhaps, the concept of collective intelligence will be best developed in the near future in terms of workable models of *augmented intelligence*—cognitive augmentation—which is a complement rather than replacement for human intelligence. When we speak of the fourth knowledge revolution, we are specifying the fifth generation cybernetic *episteme* driven by 5G wireless networks, quantum computing, deep learning and big data that replaces the Internet with a cyber-infrastructure that includes range of new converging technologies including AI that are fusing the physical, digital, and biological worlds and unifying science at the nano-level. It is on its way, the signs are there and it will impact all academic disciplines and institutions, creating an unsurpassable horizon in which human beings learn to become truly digital.

This will be the evolutionary cultural and symbolic system within which we experience what it is to know, communicate, and learn to be human. Reminiscent of Foucault's early structuralist period, in the history of the systems of thought, it eclipses the individual knowing subject. This 'disappearance' or diminution of the knowing subject is not just a result of structures or structuralism and the decentering of the knowledge subject within enveloping global networks of power-knowledge—of the dynamic flows and circuits of knowledge, but rather a result of the conjunction of two forces of informationalism and new biology of genetics that I call 'bio-informationalism'. When these two primary technological vectors converge with the newest technologies of AI, deep learning and quantum computing, on the one hand, and nano-scale technology, on the other, then the individual human knowing subject is superseded entirely or its centrality is completely displaced.

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Michael A. Peters is Distinguished Professor of Education at Beijing Normal University Faculty of Education PRC, and Emeritus Professor at the University of Illinois at Urbana–Champaign. He is the executive editor of *Educational Philosophy and Theory* and founding editor of ten international journals. His interests are in philosophy and education and he has written over one hundred and twenty books, including several books on Wittgenstein. He was made an Honorary Fellow of the Royal Society of NZ in 2010 and awarded honorary doctorates by State University of New York (SUNY) in 2012 and University of Aalborg in 2015. His recently published book is *Wittgenstein, Antifoundationalism, Technoscience and Philosophy of Education* (2020).

Chapter 3
Toward an Epistemological Mutation in the Humanities and Social Sciences

Pierre Lévy

The Common Places of Emancipation

The vast majority of the world's population is—or will soon be—connected to the Internet, that is to say to a global apparatus of communication, memory and computing that was still unimaginable at the beginning of the last century and which now contains the life of the city, from its scientific, artistic and spiritual peaks to its criminal abysses. On the dark side of the force, economic, politico-military and cultural powers unscrupulously use the new algorithmic medium to fight their opponents and to seduce, exploit or enslave their subjects. On the bright side, the Internet opens up a freedom of expression and a diversity of information unknown in the age of the classical media. We are just beginning to explore the possibilities of large-scale coordination and collective intelligence offered by the Internet, from Wikipedia[1] to GitHub,[2] from the collaborative economy to digital cities. Although we tend to oppose them from a moral point of view, the power of oppression and destruction—negative—and the power of creation and thought—positive—are two aspects of the same cognitive increase. And we ourselves—against our will, and though darkness always seems to come from the other—feed these two figures of force and give them hold, including by voluntary servitude so well described by La Boétie and by the participation in the multitude of micro-processes and social relations that we are

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[1] See https://www.wikipedia.org/. Accessed 9 October 2019

[2] See https://github.com/. Accessed 9 October 2019

P. Lévy (✉)
University of Montréal, Montréal, Canada
e-mail: pierre.levy@mac.com

going through and that Michel Foucault (1975[3]; 1976–1984[4]) invited us to analyze in detail. Finally, no artificial intelligence system will protect us against 'fake news' and manipulations of all kinds. The only serious cure for the dark side of things and the best way to actualize the positive realities of the new medium are the education of the people and especially their training in thoughtful communication and critical thinking. But the influence of critical thinking—and this is the hypothesis that will guide the rest of this text—depends in turn on the quality of research and teaching in the human sciences.

Now plunged into a new political space, we must assume our responsibility as intellectuals and formulate, if not the complete program then at least a basic orientation, a new philosophy of enlightenment, a humanism of the digital age that is at the height of the power of algorithms and the current anthropological mutation. The 'we intellectuals' of the preceding sentence primarily encompass researchers in the human sciences, whatever their institutional or professional situation. For example: authors, readers and publishers of collections of books and scientific journals in the human sciences. More broadly, the term 'intellectuals' refers to all actors who—beyond their strict professional practice and their particular short-term commitments—feel responsible for the coming civilization and their legacy to future generations. If it is still alive under its contemporary avatars, the movement of enlightenment is primarily a business of growth and dissemination of knowledge. However, this movement must no longer 'adapt' to the digital world, let alone deplore its advent, but rather take the lead in a movement of emancipation of collective intelligence in the global data-centric society.

Let us begin by stating four imperatives that currently garner the support of well-informed people: (1) maximizing the common knowledge; (2) opening data, models, algorithms and software; (3) optimizing the transparency of online processes; (4) as far as possible, ensuring the practical and legal sovereignty of individuals over the data they produce or target them.

Maximizing the commons of knowledge means that no one should have to pay to access knowledge bases. This includes dictionaries, encyclopedias and textbooks, research findings, data produced by government institutions or agencies, information needed to prevent disease and improve public health, legal databases and learning resources of all kinds. A good part of this program is already realized or in progress. It should be noted, however, that much data that is officially public is inaccessible in

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[3]Editorial note: Lévy here refers to the original book in French: Foucault, M. (1975). *Surveiller et punir : Naissance de la prison.* Paris: Gallimard. The book was published in English two years after as Foucault, M. (1977). *Discipline and Punish: the Birth of the Prison.* New York: Random House..

[4]Editorial note: Lévy here refers to the original books in French: Foucault, M. (1976). *Histoire de la sexualité, I.* Paris: Gallimard., Foucault, M. (1984a)., *Histoire de la sexualité, II.* Paris: Gallimard., and Foucault, M. (1984b). *Histoire de la sexualité, III.* Paris: Gallimard. The books were first published in English as: Foucault, M. (1978). *The History of Sexuality Volume 1.* New York: Pantheon., Foucault, M. (1985). *The History of Sexuality Volume 2.* New York: Vintage., and Foucault, M. (1986). *The History of Sexuality Volume 3.* New York: Vintage.

practice because of the lack of adequate search, navigation and exploitation tools. We now prefer to speak about FAIR data (findable, accessible, interoperable and reusable) rather than public data (Force11 2019). In addition to directly promoting learning and access to information, 'pooling' promotes transversality: decompartmentalization and cross-pollination, which are so useful to the growth of collective intelligence. Creation and research communities can thus interconnect and recombine the available information, which brings us to the principle of openness.

The tropism toward openness was first experimented in the scientific community (like the quick publication in arXiv[5]), the free software movement, the creative commons license, Wikipedia, GitHub and many other endeavors. We add here to the principle of free access the possibility for volunteers to participate in a collaborative manner to the growth of the commons. Openness has been adopted by many governments and major industries. 'Open by default' becomes the norm. As an example, Microsoft (GAFAM's[6] final M), which made its fortune on the commercialization of closed proprietary software but whose main revenue now comes from cloud services, announces in 2018 that its entire portfolio of software patents is changing over time toward open source (Vaughan-Nichols 2018). Why this tropism toward openness? Because it maximizes the improvement of goods and services, promotes trust and supports collaborative engagement. It can be applied to data formats, operating systems, models, algorithms and even hardware (see Wikipedia 2019a). Openness also applies to taxonomies, ontologies and information architectures since the public space that we want must encourage all participants to create, comment, categorize, evaluate and analyze their content with full knowledge of the facts and with full capacity to act.

Finally, the transparency of actors and processes forms the basis of trust and conditions the authenticity of a dialogue without which the democratic life of a city is destroyed. To limit corruption and manipulation—which is obviously fueled by opacity—people and data must be traceable and auditable, including platform administrators and government officials. In the continuity of the tradition of enlightenment emancipation, transparency should not be unidirectional (the subjects dominated under the panoptic gaze of a dominant caste that remains in the shadows) but rather reciprocal (see on this point Brin 1998) without distinction between rulers and ordinary people. How could we aim for a reflexive collective intelligence—allowing teams and communities of all sizes to observe and compare their cognitive activities—if we did not affirm transparency as one of the main values of our movement?

To these arguments of common sense and ethics in favor of transparency, I add, to counterbalance them, two remarks, one of which is political realism and the other anthropological banality. First point, according to the theory and the practice of

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[5]See https://arxiv.org/. Accessed 9 October 2019

[6]GAFAM is an acronym for the five leading US technological companies: Google, Apple, Facebook, Amazon and Microsoft.

Julian Assange (Wikipedia 2019b), the contemporary powers have a dimension of 'conspiracy': their networks of secret information exchanges allow them to think and act without the knowledge of their opponents and the public. To overcome this dimension, their opponents must interrupt or manipulate their internal communication and especially organize leaks to the outside. Illustrated by the action of WikiLeaks[7] and other networks of journalists and whistleblowers, the informational guerrilla fights a war of attrition against an enemy conspiracy that forces it to exhaust its resources to maintain the security of its network. The secret becomes more and more expensive, the powers adopt counter-strategies which minimize the classic occultation in favor of modes of internal coordination and stupefaction of the adversary which are all the more effective that they take place in broad daylight. Secondly, the pressure to transparency on the most powerful individuals and organizations is an easily observable phenomenon. Large publicly traded companies must regularly publish their results and are scrutinized by a multitude of analysts and activists. At the top of rich and democratic nation-states, presidents, ministers and even ordinary members of the political and journalistic class expose their ideas and feelings on social media and live in a sort of permanent reality show where their actions are scrutinized by the public.[8] While the weak and destitute remain in the dark and the old mafia powers cultivate the secret, the assumed transparency could signal the brilliance of the rising powers.

The necessities of all kinds and the desire for attention that value transparency must be tempered by respect for the privacy of citizens. Floridi (2014) noted that while the transmission of information was still expensive in the nineteenth and twentieth centuries, it is privacy that becomes expensive in the digital space. So the balance of public and private life that had stabilized for a few centuries is being challenged by the age of smartphones, social media, the Internet of Things, cloud data traffic and collusion between platforms and intelligence services. In recent years, the old problem of privacy is giving way to the new claim of the sovereignty of individuals over the data they produce and that concern them. Who are our messages on social media ultimately being broadcast to? Do we know exactly who will have the right to exploit our data, and how, when we accept the terms of use of the platforms? Can we take advantage of the right to be forgotten and ask Google to erase from its results sites that disseminate slanderous information about our us or that reveal long-past and expiated mistakes? To these fears are added new hopes. The crucial information concerning our civil status, our financial or legal situation, our title deeds, our contracts, our diplomas or our health are today confiscated by closed and opaque institutions dating from the paper era and facing which the individual is in a situation of dependency. Why not put the citizen of the new political space

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[7]See https://wikileaks.org/. Accessed 9 October 2019

[8]This is not new. Agamemnon says at stage 5 of Act I of Iphigenia of Racine: 'Sad destiny of kings! Slaves that we are _ And the rigors of the lot and the speeches of men! _ *We see ourselves constantly besieged by witnesses* _ and the most unhappy dare to cry the least!' (Racine 1963) I underline. Racine is inspired by Euripides' Iphigénie en Aulide here.

in the center and—once information is guaranteed by a procedure accepted by all—grant him the self-management of his personal data while streamlining the transfer of information? No more bureaucratic harassment of countless incompatible forms from neighboring jurisdictions that require the same information under other headings and the same pieces to be provided for the thousandth time! This is the whole promise of 'sovereign identity' backed by the blockchain or other crypto-technologies (see Duff and Smolensky 2017). This self-managed digital identity would free us from the weight of proving again and again that we are ourselves. It would defend us against the oppression resulting from the bureaucratic fragmentation of the old states as well as against the information exploitation of the new centralized platforms.

In short, the new self-management techniques of personal identity will redefine the private-public relationship in favor of a direct control of its data by the citizen who can decide to whom, when and for what uses his crypto-certified information are transmitted (see for example Coyote 2018). In the same vein, but with other techniques, Tim Berners-Lee (2018), the designer of the World Wide Web, recently launched the 'Solid' protocol, which is specifically designed to give individuals control over their data and applications they use. We find the same concern for decentralization and reappropriation of their data by users in projects like Holochain,[9] Scutlebutt[10] and many others. But from the perspective of our reflexive collective intelligence, we must not only give people a secure and practical control over their own data, but also send them back the moving image that their aggregated and anonymized data draw together—in the communities and social networks—thanks to finally democratized analysis and visualization techniques.

It should be noted that the increase in the knowledge commons, the open source premium, the requirement for transparency of processes and algorithms and the sovereignty of individuals over their data are already part of the emerging political culture. Although not yet realized, these principles are now widely accepted and—except disaster or regression—will become increasingly important in the future. On the basis of these common premises, we must now formulate riskier proposals, which are not yet part of the *doxa* but which, if understood and especially put into practice, will make us cross a decisive threshold of collective intelligence. The project of renewal of humanism and reactivation of the program of enlightenment emancipation in the new digital space has two joint aspects: epistemological and political.

An Epistemological–Political Project

First, it is an epistemological project. The human sciences are now balkanized into disciplines and divided into theories that often do not even agree on their disagreements. Here, we are very far from the division of disciplines according to objective lines of complexity levels (physics, chemistry, biology, etc.) prevailing in the

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[9]See https://holochain.org/. Accessed 9 October 2019

[10]See https://www.scuttlebutt.nz/. Accessed 9 October 2019

sciences of nature and the general agreement of the 'hard' sciences on their methods and their organizing categories. Moreover, in the human sciences, with some exceptions, the degree of formalization of models and testability of theories remains very low. All this recalls the situation that prevailed in alchemy before the emergence of modern chemistry in the late eighteenth century. But the conditions are ripe for a scientific revolution. The archives are gradually digitized, and almost all human activities produce a flood of data. To process these data, we have efficient analysis and visualization algorithms as well as a gigantic computing power. Finally, twenty-first century modes of communication open new avenues for dialogue, corpus sharing and tools, international collaboration and publication for research teams. If we succeed in transforming these favorable conditions into qualitative change, the knowledge of human society about itself—according to the full range of scales: from small groups to the species—would become more reliable, more abundant, better disseminated and put at the service of human development (Lévy 2011: Chap. 5).

Secondly, it is a political project. I am not aiming here for any direct involvement in the political life of nations, in geopolitical confrontations or in cultural wars because, for the last few centuries, diverse and quickly obsolete sided parties have unfortunately contributed to discrediting the scientific enterprise as a whole. (Suffice it here to mention biology in the twentieth century, which was racist in Nazi Germany and anti-Darwinian in Stalinist Russia, let us pass charitably on the often-dubious political commitments of philosophers and researchers in the human sciences.) The work in the field of the humanities will obviously be able to obey political ends and to intervene in the news cycle, but my objective in this text is to indicate a general orientation at the scale of the coming century, a roadmap which can mobilize in a sustainable manner all the researchers in the perspective of a renewed humanism, regardless of the contingencies of political news. I place myself in a long-term universalist perspective that aims to highlight the effects of authority. This vision is fed in particular by Michel Foucault's analyzes of epistemes or regimes of truth (see Foucault 1966[11] and 1969[12]) and Marcello Vitali-Rosati's (2018) recent book on editorialization. The authority we place on certain knowledge and the specialists who produce it, as well as the beliefs we hold about our societies and the places occupied by different people, are decisive elements of the political order. But these regimes of truth and these hierarchies of authority emerge from conventional symbolic games, themselves pegged to media systems (see in particular the works of Milman Parry, Eric Havelock, Harold Innis, Marshall McLuhan, Walter Ong, Jack Goody, Elisabeth Eisenstein and Frances Yates, authors that I picked up and quoted in my books *The Technologies*

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[11]Editorial note: Lévy here refers to the original book in French: Foucault, M. (1966). *Les mots et les choses: Une archéologie des sciences humaines.* Paris: Gallimard. The book was published in English as: Foucault, M. (1970). *The Order of Things: An Archaeology of the Human Sciences.* New York: Pantheon.

[12]Editorial note: Lévy here refers to the original book in French: Foucault, M. (1969). *L'archéologie du savoir.* Paris: Gallimard. The book was published in English as: Foucault, M. (2002). *The Archaeology of Knowledge.* Trans. A. M. Sheridan Smith. London and New York: Routledge.

of Intelligence (Lévy 1990) and *The Semantic Sphere* (Lévy 2011)[13]). For example, the arrival of the printing press in Europe has empowered publishers and readers while strengthening the authority of carefully revised, translated and 'published' canonical texts. At the same time, the traditional regime of church authority, which relied on oral and handwritten transmission, was declining. This is illustrated by the triumph of humanism in the sixteenth century, the adventure of Lutheran reform and the takeoff of the modern scientific community. Marcello Vitali-Rosati, well aware of the solidarity between the modes of knowledge, the regimes of authority and the media system of a period, has shown that the shift of social communication into the Internet—besides being complex and differentiated according to platforms and algorithms—questions the scholarly hierarchies and knowledge legitimization procedures that had stabilized in recent centuries. By the distinction and the explication of the processes of editorialization—that is to say the distributed mechanisms of production of authority and belief—which unfold in the algorithmic medium, our emancipatory project will contribute to the creation of a political space favorable to critical thought as to the autonomy of individuals and communities.

Like fish in water, the human species lives in the element of meaning and the question of meaning is at the heart of humanities and social sciences. I hypothesize that the new digital space will enable us to formalize and study the 'semantic sphere' on a scale and with a degree of precision that previous cognitive technologies did not allow. The crucial condition of this epistemologico-political program is transparency, since this quality supports both the formalization necessary for calculation and the critical reflexivity peculiar to philosophical humanism. But in this case, it is no longer a question of the ordinary transparency on which we agree without difficulty, but of *a radical transparency which aims at the molecular mechanisms of meaning production: linguistic semantics, interpretation in context, reference operations, coordinated emergence of authority and belief.*

In order not to get lost in some unrealistic utopia with totalitarian perfume, let us immediately recognize the limits of such an undertaking. Michael Polanyi, one of the greatest epistemologists of the twentieth century, has shown in his books (including *Personal Knowledge: Towards a Post-Critical Philosophy*, 1958) that scientific knowledge comes and go between explicit knowledge (clear, formal, decontextualized) and tacit knowledge (opaque, intuitive, incarnate and contextual), and that this back and forth movement echoes the classical dialectic of theory and practice. Even in the most rigorous scientific fields, as far as one strives to push the process of explication of knowledge, there is always an inexplicable part, a background of personal experience, tradition and concrete evidence which cannot be reduced to universal reason. Not only can the tacit part of knowledge not be completely eliminated, but it is the foundation of the clear and formal part, much as discursive awareness emerges from the myriad opaque processes of the body. This does not

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[13]Editorial note: Lévy here refers to the French edition: Lévy, P. (2011). *La Sphère sémantique 1. Computation, cognition, économie de l'information.* Paris and London: Hermès-Lavoisier. In the same year, the book was also published in English as Lévy, P. (2011). *The Semantic Sphere 1: Computation, Cognition and Information Economy.* London and New York: Wiley.

mean that efforts to increase the universal and transparent dimension of knowledge are in vain—any progress in modeling is good—but rather that these efforts will never be crowned with definitive success: the implicit reserve is constantly being reconstructed, and the unknown is still expanding beyond the reach of our theories and our instruments of observation. Let us recognize our limits and remember that 'everything' cannot be explained and even less theorized.

Let us take a step further in the path of intellectual humility with Karl Popper (see Popper 1972). Even the part of the knowledge that has been formalized does not offer us unshakeable support. Indeed, no theory or causal model can be proved absolutely true. It is impossible to prove the truth of a theory because the same series of observations—or given statistical results—can always be explained by several causal hypotheses. One can only prove the falsity of a theory when it fails to pass an empirical test. It is important to recall this epistemological precaution at a time when large-scale statistical methods (big data, machine learning, etc.) are triumphing. Statistical studies may suggest causal patterns or general rules; they cannot establish them absolutely. Moreover, the identification and division of objects counted in quantitative methods necessarily implies some accommodation on a relevant scale and the choice of a categorization system, elements that are rarely explained and which are necessarily conventional and dependent on practical contexts and goals of the researchers.

In short, our epistemological program for the future of the human sciences aims resolutely to illuminate the mechanisms of meaning production by using all the resources of the new algorithmic medium, but without maintaining any illusion about the possibility of total transparency and without pretending to reach a single true theory. It is rather to open the way to the critical exploration of an inexhaustible universe of meaning. As far as the political dimension is concerned, one of the main conditions of autonomy is self-knowledge. In this spirit, the reflexive collective intelligence program converges asymptotically the objects and subjects of the human sciences. Communities will analyze their own data and those of others through shared tools and explicit procedures, according to a multitude of organizing hypotheses and stories that are always open to criticism. Individuals—researchers, authors, curators, evaluators—will participate in many communities in a variety of roles and will contribute to increased knowledge in a stigmergy mode.

Producing knowledge is obviously a special case of producing meaning. In the sciences of man and society, however, knowledge has precisely as its object the conditions, the causal mechanisms and the creative processes of the production of meaning. To become the scouts of a civilization of reflexive collective intelligence, researchers in the human sciences must set an example—in their practice!—of a production of meaning that is offered to the knowledge in the most transparent way possible. Because their results and research processes can become the raw material for new research, they are intended to produce the data that will best lend themselves to analysis and interpretation. What method will be best to make the production of knowledge in the human sciences as transparent as possible? Since we are interested in the production of meaning and knowledge, our objects are acts. This is why pragmatics offers me a relevant theoretical framework. I will use the ideas of Austin

(1962), Wittgenstein (1993[14] and 1958) and some very general notions of game theory. On the other hand, it should be emphasized that acts of meaning production can be reduced to reading and writing operations—these two terms being taken in the most general sense—and all the more so because they are performed and captured in the algorithmic medium. When I speak of writing or coding in the following lines, I will imply the symmetrical reading or decoding operation that writing is intended to provoke in principle.

Following the convenient distinction proposed by Austin (1962), let us divide the symbolic act into three layers: locutionary, illocutionary and perlocutory. The production of meaning begins at the locutionary level with a linguistic statement, the writing of a text. It continues at the illocutionary level by the conformity of the enunciation or the writing with certain social rules, the effective engagement in a conventional 'language game' and the immersion in a context. In the case of the humanities, it is at this level that the operations of reference, reasoning and dialogue are performed, here that we point to a speaker, an author, a corpus or a set of data. The act ends at the perlocutionary level by producing effects whose main ones, in our case, are belief and authority. Let us now examine how these three dimensions of meaning-making can be formalized.

IEML: A Semantic Coordinate System

The locutionary level concerns that part of semantics that depends on the dictionary and the grammar of a language. The meaning here is strictly linguistic. But—as excessive as this position may seem—a text in natural language does not constitute the formalization, or the transparent expression, of its meaning. We know, in fact, that computers cannot understand or translate a text in natural language simply from a grammar and a dictionary (the 'code' of the language) because the same text in natural language can correspond to several underlying grammatical structures and the meaning of words is ambiguous. It is clear from a dictionary that many words have several meanings. Humans interpret—or disambiguate—the text with the help of context, that is, by injecting their understanding of the language game or the discursive genre practiced by the enunciator, recognizing the social and material environment of the enunciation, identifying the referents to which the groups of words point, etc. In other words, we decode a text in natural language thanks to a pre-comprehension, most often intuitive, of the situation and its stakes. Since it is impossible to ask a computer to follow this path, automatic language processing uses

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[14]Editorial note: Lévy here refers to the French translation of the book: Wittgenstein, L. (1993). *Tractatus Logico Philosophicus.* Trans. G. G. Granger. Paris: Gallimard, Paris. The commonly used English translation is: Wittgenstein, L. (1961). *Tractatus Logico Philosophicus.* Trans. D. F. Pears and B. F. McGuinness. London and New York: Routledge. *Tractatus Logico Philosophicus* was first published in German in 1921.

statistical methods whose result must always be reviewed by a human. In order to formalize the linguistic semantics, that is to say the locutory dimension of meaning, I invented a univocal language, Information Economy MetaLanguage (IEML) whose texts are formalizations of their semantics: the words have only one meaning, and the grammatical structure of the texts is entirely determined. Each separate IEML text corresponds to a distinct concept, and the linguistic meaning of an IEML text can be inferred automatically from its reading. That is why an IEML text is called a uniform semantic locator (USL) . An algorithm determines the linguistic meaning of a USL and calculates semantic relations between USLs only from the IEML dictionary and grammar, without the need for statistics on large corpora. In practice, IEML will be used not to write books or articles, but as a semantic tag instrument for texts written in natural language, as a tool for categorizing data and as a documentary metalanguage to describe formally (in a transparent and critical way) the language games, the communication roles, and the reference modes that contribute to the production of meaning.

IEML is based on the great achievements of linguistics of the last century. According to Ferdinand de Saussure, father of contemporary linguistics, linguistic symbols consist of two parts, the signifier (an acoustic or visual image) and the signified (a concept or an abstract category). The relationship between the two parts of the symbol is conventional or arbitrary. To illustrate this last point, it is easy to see that the same signified corresponds to distinct signifiers in different languages: horse, *cavallo*,[15] *cheval*,[16] *pferd*,[17] etc. Saussure also showed that the plane of the signifier, or the phonology of languages, was based on a system of differences between sounds, each language having its own list of phonemes and especially its own way of arranging the thresholds of passage between two phonemes in the sound continuum. A phoneme does not exist in isolation, apart from a range of variations, much as musical notes exist only in relation to a musical system. In the same way, the signified are not self-sufficient atoms of meaning but correspond to positions in systems of differences: paradigms. Thus, the names of colors are opposed, distinguished and nuanced in a paradigm of colors that varies with languages. Thus, the verbs relating to commercial transactions (buying, selling, lending, refunding, renting, etc.) mark oppositions and differences which are mutually explained on the invariant basis of the same kind of action. Linguistic semantics does not anchor itself in fixed and independent natural realities, but in a process of comparison, opposition, differentiation and referral between signified within a systemic grid looped on itself, such as the meaning of a word in the dictionary is defined by other words that, themselves, etc. Let us summarize the Saussurean moment of linguistics by saying that languages are

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[15]Italian word for horse.

[16]French word for horse.

[17]German word for horse.

conventional and differential. The other great moment of twentieth-century linguistics is due to Noam Chomsky. For the MIT professor, linguistic capacity is a genetically determined trait of the human species. Languages, in spite of their diversity and their continual evolution, all share the same 'universal grammar' corresponding to this innate linguistic skill. This theory would explain why children learn so fast and so spontaneously to speak without having to give them lessons in grammar (Chomsky 2000). Chomsky has expounded a formal—and in fact challenged and revised—version of universal grammar (Chomsky 1957). Chomsky's most valuable scientific discovery is probably his theory of regular languages: he has demonstrated that there is a correspondence between algebra and formal syntax. In principle, language is a computable object, at least on a syntactical plane (Chomsky and Schützenberger 1963).

In order for a language to be easily manipulated by computers, or computable, it must be a regular language in the sense of Chomsky: a kind of mathematical code. Natural languages are obviously not regular languages. The regular languages actually used today are programming languages. But the 'semantics' of programming languages is just the execution of the operations they control. None of them approaches the expressive capacity of a natural language, which makes it possible to speak about everything and nothing and to perform many other illocutionary acts than to give instructions to a machine. This is why I asked myself the following question: how to conceive a regular language capable of saying everything—like natural languages—and whose computers would decode not only the syntactic structure but also the semantics? To solve this problem, I remembered Saussure's lessons. Since languages are conventional, nothing forbids the construction of one whose arrangement of signifiers is of the 'regular language' type. A regular language has a computable syntax, but the syntax governs the signifying elements of the language, the phonemes, and their sequences, with several nested levels of complexity. Since both the signifiers and the signified must be organized by a system of differences, nothing prevents us from giving—by convention—to this regular language a system of differences of the signified that is parallel to that of the signifiers. Here is finally the principle of resolution of my problem: In a regular language whose system of differences of signified coincides with that of signifiers, not only the syntax but also the semantics is computable. This is precisely the case of IEML, which is therefore a language with computable semantics!

If the general principle underlying the semantic computability of IEML is easy to explain, its actual construction, which took me twenty years, is obviously more complex. This is not the place to exactly describe the grammar and the dictionary of IEML. I will content myself with giving the outline of its linguistic structure. The IEML dictionary contains elementary sense units, the 'morphemes,' which are organized into levels. The morphemes of a certain level are regularly constructed with morphemes of the level immediately below and maintain with them a relation of semantic composition. Morphemes of the same level are defined in paradigms, which are groupings of morphemes of the same semantic family as colors, social roles, technical functions or skills. The morphemes of the same paradigm have a constant part which indicates their belonging to a given semantic family and a variable

part which describes a system of differences. The IEML syntagmatic function allows you to construct words by combination of morphemes, sentences by combination of words and super sentences by combination of sentences. The word allows you to express categories, topics, topics or themes. The sentence describes events, facts or complex objects. Finally, the super sentence states relationships between facts, causal hypotheses, theories or stories. The word, the sentence and the super sentence in IEML correspond, in terms of linguistic semantics, to the firstness, the secondness and the thirdness of Charles S. Peirce (see Deledalle 1978; Peirce Edition Project 1998).

IEML differs from other documentary metalanguages because it is unequivocal but without imposing an ontology or classification a priori and because, despite its univocity, it nonetheless possesses the flexibility and the expressive possibilities of a natural language. Indexing, searching and exploration of data used by the humanities would be improved if IEML was used as a semantic metadata system. Today, search engines organize their databases by indexing documents from occurrences of strings of characters, that is to say on the purely morphological or signifier plane of the language. In contrast, IEML proposes a semantic code where the variations of form between the words correspond to their variations of meaning. Keywords and summaries in IEML are not character strings evoking sounds but univocal conceptual addresses, points in a coherent and computable coordinate system.

In short, IEML makes it possible to index the documents and the data by their semantics and at all the stages of the editorialization process: writing, publication, librarianship, reading, comment, appreciation. On this basis, algorithms could weave automatically semantic links between the data. Imagine also the added value of knowledge that a search engine capable of distinguishing—and cross-referencing!—subjects (words), facts (sentences), and theories (super sentences). The adoption of common mathematical coordinate systems and measurement units for space and time has played a vital role in the scientific and technological advances of the last three centuries as well as in the development of the concerted action opportunities in our communities. A semantic coordinate system would take the human sciences one step further and increase our potential for collective intelligence. Having passed a threshold of scientificity through the coding and computing of linguistic meaning, and for that more self-confident, the human sciences could establish a better-balanced relationship with the natural sciences and the specialties of engineering. In the human sciences, separate disciplines and theories could interact and collaborate more easily. Multiplied by the spatial and temporal dimensions, the semantic dimension would open up a new universe, coherent and computable, albeit inexhaustibly complex. Projected on the background of the semantic coordinate system, the data would reveal precisely observable shapes and movements, reproducible objects and processes. And if the data recorded the memory of a community—and especially that of a community of researchers—the emerging image would represent a good part of its cognitive activities. From then on, a more fluid feedback loop between the ecosystems of ideas and the communities that maintain them would bring us closer to the ideal of reflexive collective intelligence.

Toward an Explanation of the Communication and Reference Games

The adoption of a semantic coordinate system would provide us with the basis of a new transparency and a sharper critical reflexivity, but the production of meaning is not reduced to the locutory act. This is why we must now examine the pragmatic part of meaning and consider the methods that would enable us to shed light on it by using the new resources of the algorithmic medium. Let us start by recalling what the illocutionary level adds to the locutory sense. The locutory meaning is that of the utterance, we have seen that it depends on the relations between signified and signifier, on systems of differences at the level of sound as at the level of meaning and finally on the grammar of the language used. At this point, semantics is internal to the language. In contrast, the illocutionary meaning is that of enunciation. Going beyond language, it concerns an intentional act in a particular spatiotemporal and social context. The enunciation points to one or more references; it speaks about something. Moreover, it takes place in a conversation or more generally in a conventional social game, which involves different rules, roles and actors. Finally, the meaning of an enunciation depends on the situation in which it occurs, with in particular its past and the memory of its interlocutors. Note that the same language (sufficient in principle to understand the meaning of a statement) can be used in very different social games: for example, in a dance hall, in a court, on a stage, in a political assembly, in a church, a classroom, a family, etc. To understand the meaning of an utterance, the knowledge of the language is not enough, it is also necessary to know the rules of the game in which the interlocutors are engaged, the situation of the party, the role of the enunciator, those of the interlocutors to whom they speak, etc.

We are interested here in the scholarly uses of the Internet, which limits the range of possible language games. But even within the social game of 'scientific research,' there are still a lot of subgames with their special rules, which depend on the discipline, the institution, the place, the moment and which usually take place in successive phases. For example, funded research follows several stages: publication of a program by a public body (with its aims and criteria), writing of grant applications by researchers, constitution of jury or assessment committees, obtaining of a grant by some candidates, implementation of research, publications, etc. Obtaining a doctorate, conducting a post-doctorate, publishing a thematic issue of a journal, organizing a symposium, awarding a scientific prize or election to an academy obeys in the same way well-regulated phases. The holding of a researcher blog or communication in social media, such as Research Gate[18] or Academia,[19] is no less ritualized and organized in cycles. Each of these scientific games has its general rules, but these vary with the countries, the governmental programs, the

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[18]See https://www.researchgate.net/. Accessed 9 October 2019

[19]See https://www.academia.edu/. Accessed 9 October 2019

scientific journals, the associations that organize the symposia, the laboratories where the theses are concocted, the social media where the ideas, data and publications are exchanged.

Each of the illocutionary acts performed by researchers (advice to a young researcher, evaluation, publication, discussion, subscription, reading, quotation, etc.) makes sense depending on the type of game in which he participates, the phase of the game in which he intervenes and special rules depending on the circumstances. In the end, the varied set of these scholarly games intertwine to form the scientific activity as a whole. Let us keep in mind that our goal is to make transparent and formalize as much as possible the illocutionary acts of researchers. That is why it would be very useful to have an open list of the scientific games in use, their phases, the types of illocutionary acts that compose them and the criteria for the validity of these acts.

Is this a grant application, an article submitted to a review, a critical report, a discussion in a drafting committee, a live tweet reporting a debate in a symposium, etc.? Despite their variety and the variety of games in which they operate, illocutionary acts most often have two crucial dimensions: communication and reference. The communication is organized between two fundamental poles, the sender and the recipient, each of which can be plural and come in a multitude of complementary roles (as evaluator and evaluated in a grant program) or symmetric (like two authors in a public debate). These communication roles include: editor, author, reader, curator, smuggler, commentator, co-researcher, teacher, student, quoting, quoted, etc. For each illocutionary act, we will try to formalize not only the identity of the interlocutors, their (exchangeable) place of sender and recipient, but also the role they play in the general process of editorialization, conceived here as a scientific conversation in the broadest sense.

The Reference Act

Let us now look at the referential dimension of illocution. In the scholarly uses of the Internet, the act of reference essentially consists of pointing to a set of data. Still according to our purpose of formal transparency, the reference can be broken down into two parts: (1) the addressing of the data and (2) the explanation of the relation between the addressed data and the semantic metadata used to qualify them. Let us start with the first point. The practice of quoting a scholarly work—article or book—is ancient in the scientific community and has resulted in a well-established codification. It is agreed to quote precisely the author(s), the title of the work, the publisher (journal or publishing house), possibly the persons who directed the publication (under the direction of), the place of publication, the date or the precise page(s) in a printed work. These rules of quotation were established at the age of printing to allow to find the texts in a library but they are being updated in the digital space.

A digital object identifier (DOI) is now preferably used to reference works or datasets, and an open researcher and contributor ID (ORCID) to designate authors

reliably. Open source tools such as Zotero[20] (developed at the initiative of Dan Cohen of George Mason University) provide a convenient way to manage and exchange online bibliographies and scientific reference sets. The smart writing tool Stylo (software developed at the initiative of Marcello Vitali-Rosati at the University of Montreal) is built from an open source network of modules that generates interoperable and easily reusable text. Especially, Stylo takes note of the transformation of the scientific reference, which goes from a graphic style exercise inherited from printing to the implementation of pointers capable of automatically fetching data in the digital space. In the end, assuming that scholarly journals turn into websites and the content of public domain libraries is digitized and made freely available, the addressing of works or data can be reduced to a uniform resource locator (URL).

Just as there are communication roles (author, reader, evaluator, commentator, curator, etc.), there are citation or reference roles that must be distinguished. Indeed, it is not the same thing to point to primary sources—the corpus on which the researcher is working—to quote previous works on the same corpus, to mention an article, to recognize an intellectual debt or even to mark disapproval (Broudoux (2017) recently published an article to take stock of this issue). But the measures of authority now in use simply count the number of citations without taking into account the qualitative mode of reference.

It is time to question the relationship between data (represented by URLs) and semantic metadata. But what is metadata in practice? For a long time, it was a coded description of a document or artifact in order to facilitate further research in a documentation center, library or museum. This description fed a system of cards, usually cardboard, to find the document on a shelf (thank to a reference number) depending not only on the author and the title but also the discipline, the subject and the content of the document represented by standardized keywords organized in thesauri. These systems of organization of the memory, obviously conventional, are very variable. They depended—and still depend—on institutions and countries. Everything was fine as long as documentary languages and indexing systems applied to collections held in one building or managed by a single institution.

With the digitization of archives and the interconnection of databases, the incompatibility and rigidity of the indexing systems inherited from the era of printing becomes glaring. The management of a metadata system for the support of a documentary corpus and the constitution and monitoring of collections have long been activities reserved for professionals in the information sciences. But the practice of curating data has now largely spilled over the narrow circle of documentalists and librarians. Millions of non-specialists organize data collections using specialized applications such as Pocket, Scoopit, Diigo, etc. [See my blog post on collaborative data curation (Lévy 2016a) and my article on the skills needed for the informed practice of curation (Lévy 2016b)]. In addition, most blogs and social media allow their users to add tags or hashtags when they post any message. We can use these

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[20]https://www.zotero.org/. Accessed 9 October 2019

semantic tags to define us (interests, skills, etc.) or to point to the publications of other users, such as when we include a link (a URL) and one or more hashtags (thus semantic metadata) in a tweet to qualify the posted document. Contemporary practices of distributed curation generate several problems. First, there are a large number of different tags, including in the same language, to express an identical concept. Second, tags expressing the same subject are different in different languages. Third, the same tag may mean several completely different things (e.g., #GPL which can mean General Public License or Global Player League). Finally, as opposed to the professional methods of documentation specialists, the procedure that has determined a user to choose one semantic indexing of one document over another is not known. The schema.org[21] community, supported by Google and Microsoft, attempts to address some of these issues by providing a standard Web indexing system. But its vocabulary—oriented by commercial objectives—remains limited, and it is certainly not sufficient to mark out research in the humanities and social sciences. On the other hand, it is monolingual English and is in the form of a relatively rigid ontology. The adoption of uniform semantic locators (USL) coded in IEML would put in the hands of the public 'super hashtags' that would resolve ambiguities, broaden the possibilities for expression, support automatic multilingual translation and open the Internet to real semantic search based on semantic computing. But IEML cannot solve the problems related to the relationship between the content of a URL and the USL that categorizes it. It is always a particular curation operation, a reference act, which decides that a particular a set of data must be labeled in this particular way.

Let us distinguish here two types of metadata: 'objective' metadata (author, date, document language, rights, file format, etc.) that are roughly those of the Dublin core (Wikipedia 2019c) and 'semantic' metadata that details the subject, content and possible angles of a document or dataset. Taking objective metadata for granted, let us focus our analysis on semantic metadata, which depends on a curator's interpretation. Today, research in the field of digital humanities inevitably involves the construction and development of a database. The main steps of this construction are: (1) the selection of a relevant subset in the large virtual database of the Internet; (2) editing and cleaning the selected data; (3) the enrichment of the database with metadata carefully determined, which will guide the automatic analysis and allow answers to research questions; (4) the choice of visualizations or the rendering of results. Semantic metadata therefore plays a structuring role in research methodologies and depends closely on the perspective of researchers. This is why it is impossible to determine in advance—and once and for all—the points of view, the problems or the theories that will illuminate a dataset. Even if the semantic indexing of documents carried out by professionals according to a standardized approach has been historically very useful, we must posit in principle the freedom of semantic categorization. There will be no single method for categorizing documents or datasets as this would clog the hermeneutical creativity of scientists and sterilize research in the humanities. Regarding the common data, we will accept the multiplicity of points of view and semantic categorizations, especially if the categories are expressed in IEML,

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[21]https://schema.org/. Accessed 9 October 2019

since they are commensurable and their relations are calculated automatically. But in order to make the reference operation transparent, we will identify the categorization method used—the link between URL and USL—and we will privilege the formal and reproducible methods. If the semantic categorization of the document is executed by an algorithm—for example an algorithm that automatically generates an IEML summary of the document—it must be open and freely accessible.

Reference Levels and the Question of Truth

To conclude this analysis, I would like to distinguish between three levels of relationship between the phrases (semantic metadata) and their references (data). These levels are determined by the grammatical complexity scale of the phrase: word, sentence or super sentence. If it is simply to indicate the subject matter of a document, we use as semantic metadata a word in IEML, that is to say the equivalent of a keyword or a hashtag. At this level, which corresponds to Peirce's primacy, categorization is in the order of sensation. The author of the reference does not affirm a truth but rather a relevance: the response of an object to an interest or the awakening of a particular attention to a phenomenon. This first salience of the semantic field has a subjective face—a point of view—and an objective face—the quality of the document—both aspects emerging simultaneously. In practice, many keyword-like semantic metadata will be implemented—perhaps successively—by document authors, curators or editors and categorization algorithms. The agent and the categorization procedure should be explained as much as possible.

If the semantic metadata evokes an event or a complex object, we use a sentence in IEML. This grammatical level corresponds to the secondness of Peirce and to the world of 'everything that happens' from Wittgenstein's *Tractatus Logico-Philosophicus* (1961). The IEML sentence is a set of syntagmatic relationships between words. Considered as a logical proposition, it describes a state of affairs, that is, a set of relationships between semantic saliences in the document or dataset. It is possible in principle to determine the truth of the proposition by a rigorous observation of the state of affairs (the document, the data, the corpus, etc.). In our optics of transparency for the operations of knowledge, it will obviously be necessary to explain the procedures or the devices making it possible to check the logical propositions, be they sensors, measuring instruments, statistical algorithms or others. A true proposition is a fact. Thanks to rules based on the logic of predicates (of the type: 'all the X's are Y's', 'no A is a B', etc.) new facts can be deduced automatically from the facts observed. (What is now called an ontology in the world of linked data is no more than a coherent set of such rules to describe a domain from a certain practical perspective.) Finally, the propositional logic makes it possible to deduce complex propositions from the facts. In short, once verified by an explicit and reproducible

procedure, metadata of the 'sentence' type is used to feed the automatic reasoning of inference engines.

In opposition to the states of things or the facts, which are observable, one cannot observe a theory: it is always hypothetical. According to Popper's epistemology, either a theory has already been refuted or it has not yet been. But the human enterprise of meaning-making needs theories—as unobservable and unverifiable as they are—to bring the facts together into a coherent whole, to give a causal interpretation to their relationships, to somehow allow for the forecasting of events in the future and even to coordinate the beliefs and actions of communities. In some human sciences, for example in history, we will speak of narratives rather than of theories. The foregoing remarks will be compared with the ideas of Hume, according to whom causality, although necessary for our understanding of the world, is not a feature of objective reality (a primary quality) but a construction of the human mind (a secondary quality) (see, for example, Hume 1748/2003: 1.3. and 14.12). Echoing the Humeian critique of causality in its metaphysical construction, Kant makes causality one of the a priori categories of our understanding, as space and time are a priori forms of our sensitivity (see in *The Critique of Pure Reason* (Kant 1781/2018) the exposition of the pure concepts of understanding that takes place in the analytics of concepts). Once again, causality is a structure of the subject, an indispensable aspect of our way of knowing. Nietzsche (for example, in *The Gay Science*, 1882: Paragraph 112 but also in many other passages of his work) radicalizes the critique of causality accomplished by the philosophical tradition of the enlightenment by considering causes, effects and theories or narratives which intertwine them like useful fictions. In the philosophical context that has just been recalled, when, in the reference operation, the phrase expresses a set of relationships between facts, that is, a theory or narrative, we will use a super sentence in IEML. The super sentence belongs to the field of Peirce's thirdness or to the class of conjectures according to Popper and the referential link that it maintains with the data is, strictly speaking, not verifiable. Nevertheless, we can evaluate the validity of a theory according to various criteria, including whether the data corroborate it, whether it contradicts itself, whether it minimizes the number of concepts used (the famous Occam's razor[22]) and whether it accounts for a maximum of facts (explanatory power).

Let us summarize our analysis of the three levels of reference. Even if we stick to scientific language games, the real logical domain of truth and falseness is limited to the relation between a proposition and a state of things. In our description of an ideal scientific practice, the logical reference corresponds to an IEML sentence connected to a set of data and including the explanation of the verification procedure. On the other hand, the simple categorization of the themes present in a dataset is never false, since it corresponds to an original salience or to a relevance. At this level, as elsewhere, arbitrariness will be controlled by the clarification of the categorization

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[22]Occam's razor is a principle that says that the simplest (scientific) explanations are most likely the correct ones.

procedure. As for the statement of a theory—which accounts for a sequence of events—it is never true, since it is by definition only a hypothesis. There are, however, several criteria for assessing the epistemic value of a theory or story. In a scientific language game, concepts are judged on their relevance, facts on their truth, theories on their elegance.

Is it necessary to emphasize that there are many other acceptable language games than those of the strictest scientific epistemology? Much of the best work in the disciplines of the humanities is largely rhetorical, that is, it belongs to the vast field of probable facts, plausible narratives and desirable decisions. In their very exercise, literary language games respond rather to formal constraints on the locution, according to a wide variety of genres and styles, and their stories can—for example—maximize the number of concepts or actants and suggest several systems of relations between reported events. Focusing on the storytelling in news, journalism is a language game other than that of science or literature, a game whose political responsibilities are obvious. Since the data, methods, tools for analysis and visualization of the best journalism are very close to those of the digital humanities, the news industry would benefit from getting closer to scientific practice and making its reference operations as transparent as possible.

Observing the Emergence of Authority and Belief

Finally, let us talk about the perlocutionary dimension of the production of meaning, namely in the case of the scientific community, the production of authority. It is important to understand how authority is created in the scientific community because this authority determines much of the beliefs—and consequently the practices—that prevail in our societies. In the case of the sciences of Man, these beliefs concern humanity in general, history, social phenomena, city life, aesthetic and literary tastes, etc. Grids of conceptual analysis, the determination of relevant objects and important topics, the truth of historical and social facts, theories and narratives that account for political and cultural phenomena, are all largely produced today by researchers in humanities, then taught to the majority of the population at school, absorbed at the university with a grain of critical salt by future executives, propagated by influential journalists and politicians, implemented by senior officials and business leaders. This is to say an inextricable link binds the epistemic and political dimensions just as the necessity of their respective autonomy. A science simply subject to political power would lose its credibility with its authority. Symmetrically, a city run by scientists would ignore the freedom of citizens, the diversity of their ethical choices and the multiplicity of spheres of existence. It remains that a large part of our cognitive references is given by the human sciences, and all the more so as societies become literate and educated. Some parts of the population accept or reject this or that belief—with the practices and policies that follow—but they do so most often within common paradigms or worlds of thought, in which oppositions echo and correspond in the

same system. These paradigms have most often been developed by communities of scholars, as they were before printing by clerics and scribes.

Today, scientific authority, and beliefs that presents its subjective face, emerge from a multitude of individual and collective judgments about authors and their publications. Publications can be considered as the objective and reified dimension—the solid core—of the scientific conversation. Let us remember that the first scholarly journals of the seventeenth century were content to print the most copied correspondence manuscripts between philosophers. While the original purpose of the publication was to put private scholarly conversations within reach of the community, it later became the normal and official medium for these conversations. As an extension of its dialogic origin, the scientific literature does not only include articles published in peer-reviewed scientific journals according to the classic standards of the twentieth century. It must be understood in a broader sense. It also includes online publications on the growing model initiated by arXiv.org or other open publishing sites that accelerate the circulation of ideas by enabling publication with a minimal initial evaluation and that leave an in-depth evaluation of articles already published for further discussion by the community of researchers on the same topic. One can also consider as a new form of publication the construction of databases that federate gradually into a huge pool of scientific *commons.* Today's scientific conversation networks also go through the blogs of researchers, social media based on collective archiving and article sharing, not to mention general social media and communications that are done in thesis defenses, colloquia, seminars, summer camps and workshops of all kinds.

As for the authors of the publications just mentioned, they belong to the scientific community through universities, institutes, research centers, laboratories, academies, teams, networks, scholarly associations, editorial boards and scientific councils of all kinds. These institutions, most often run by the researchers themselves (in principle according to the standards of academic freedom and university autonomy), hire their staff and equip research. The funding, public or private, of these institutions and their research programs is of course a *sine qua non* of their operation,; hence the inevitable link of the academic community with governments or with private companies investing in research. With the number and the quality of its publications and quotations, the institutional position of a researcher makes also an important part of its authority. At the heart of the procedures of legitimation and construction of authority are argumentative practices, which are implemented in the publications themselves, in the publication decisions and in the procedures that decide on the institutional advancement of the researchers. The arguments aim to influence the judgment of peers (and sources of funding) in favor of individuals, research programs, theories, or paradigms. The range of argumentative forms is quite broad. They include: the emphasis on originality, the citation of scientific publications from already recognized authors, the precise reference to corpora, the description of reproducible methodological procedures, the visualization of data or computer simulations, the promise of applications that are (a) useful according to political standards or (b) rewarding on the market. Arguments often take the form of hypothetico-deductive reasoning or statistical induction, but—in the great tradition

of rhetoric—they also rely on political and cultural common assumptions to promote the plausibility of their conclusions, all on the background of the implicit know-how shared by researchers because of their training and practices. Let us add that accepted argumentative styles can be quite different from one discipline to another.

The scientific community is officially governed by cooptation and peer review, which emphasizes its self-referential and autopoietic dimension. It does not receive its truths from an external authority or a transcendent authority. Admittedly, its members belong to their time, they are affected by the political contradictions of their society, they receive their problems from the culture where they evolve and aim to improve the fate of their contemporaries. But, in principle, the scientific community is distinguished from other social institutions by its cognitive autonomy. In a collective, evolving and circular process of validation, the judgments that determine the fate of scientific institutions, their members and their publications are determined in return by the academic world, scientists and their scientific literature. And these judgments, like the evaluation criteria on which they are based, are not only about truth and error, but also about the original or the redundant, the laborious or the elegant, the possible or the impossible, the fertile or the infertile, the promising or the futureless one, the updated or the latecomer, etc. Far from being infallible, the consensus of the scientific community is similar to the moments of an open collective learning or an exploration trip. Bureaucratic or conservative inertia, clique phenomena and gregarious runaways are commonplace. Scientific knowledge advances by trial and error, and this groping step sometimes includes the difficult realization that some decisions have led to dead ends and that we must turn back. In the case of the human sciences, this complex process of knowledge production contributes to the construction of relevant socio-historical phenomena and credible explanatory theories on the cultural scene: again, by drawing the background of the cognitive processes that take place in a society, it plays a considerable political role.

The immersion of the scientific community in the digital space has had undeniable positive effects. I have already highlighted the facilitated access to publications, corpora of data, algorithmic tools and computing power, to which I must add the multiplication of transversal contacts and opportunities for collaboration. But there is also a one-dimensional flattening of evaluation norms—and therefore of authority production—by the major platforms, Google being the most important. Simply put, in order to be consecrated, an author or publication must arrive in the first page of the results of a query, whether it is the search engine for the general public or Google Scholar, specialized in scientific publications. Certainly, Google is not the only one responsible for the quantitative standardization of the production of authority. The Shanghai ranking of academic institutions or the calculation of the impact factor (number of citations divided by the number of articles published for two years) scientific journals cannot be attributed to the digital giants. The rise of quantitative management methods in science comes with the increase of research expenditure, the multiplication of the number of researchers, the swelling of the number of students in higher education, the exacerbated international competition between research centers and universities and, in short, the growth, industrialization and globalization of the sector. But once the general context of an increasingly quantitative and standardized

research management has been recognized, the distortion introduced by Google in the editorialization process of the scientific literature still has to worry us for several reasons. First, its aims are primarily commercial. This is not an evil in itself, but there is no reason for scientific authority to be measured by a company whose aims, values and modes of arbitration are not precisely those of science. Then, its algorithms are opaque, protected by commercial secrecy, and therefore at odds with the transparent and critical approach that should regulate the scientific authority. Finally, Google's unique role in global communication makes it the gateway and the default reference for people looking for information (including in the academic world!). And this monopoly position is not balanced by any serious counterweight.

If the scientific authority is calculated by Google, it means that our beliefs are and will be more and more determined by its algorithms. The platform uses some results of the complex knowledge validation games of the scientific community and—not without bias of all kinds—projects them violently on the first page of Google Scholar results. Beyond the Google case, do we want to transfer to huge commercial platforms, in addition to their economic dominance and de facto political power, the symbolic power that the church once had or that the University exercises today? But the problem does not come from algorithms, but from the fact that these algorithms are opaque, that they are fed by grossly quantitative data and that they do not allow (and, moreover, do not aim at) a reflexive growth of the researchers' collective intelligence. Let us make no mistake, Google provides huge services and it is precisely his achievements that allow us to imagine the following stages in the evolution of the algorithmic medium. If that—what Google is doing and which was still unthinkable at the end of the twentieth century—is now possible, imagine what could be in one or two generations, provided we move firmly on the path of reflexive collective intelligence!

After analyzing the process of producing authority in the scientific community, its political stakes and its hijacking by Google (or the platforms that will succeed it), we can now resume the course of our exposition about the transparency of knowledge production in the digital space. In principle, things are simple: the authority is nothing other than the perlocutory effect of illocutionary acts of communication and reference that I analyzed above. This perlocutory effect aggregates the reading and writing operations that can be detailed in evaluation, publication, quotation, commented reading, dialogue, etc. The state of knowledge at a given moment forms the common environment in which scientific communication takes place. According to this stigmergic communication, authority and belief result from a distributed multitude of illocutionary acts by researchers (and their readers), and it in turn guides the communication and reference games in which they engage. The calculation of the perlocutory effects of researchers' actions should not pose any particular technical problem since contemporary social media and large platforms are already able to analyze with great precision all aspects of our online engagement.

In this text, I have suggested an abstract collaborative read–write machine capable of generating reflexive collective intelligence from the commitment of its users-researchers. The locutory level of this machine is woven by IEML, a language with computable semantics. It is a coordinate system of the universe of meaning, a sort

of cosmic chessboard, each cell of which is a distinct concept. The addresses of the semantic sphere (the USLs) are used to describe the data, but also the rules and the modalities of the reference to the data as well as the language games and the communication roles of researchers. Researchers, data and acts of meaning-making come into play at the illocutionary level. On this floor, researchers are addressed by an identifier of the ORCID type and data by URLs. Our scholars communicate by taking on a variety of roles in a variety of language games and in doing so, they point to the data they consult, produce, analyze and categorize. Lastly, the perlocutory level records the social consequences of the reading and writing acts performed at the illocutionary level. In this last stage of our virtual architecture, researchers compose authority functions from variables such as the weighting of the measured commitment types (publication, quotation, reading, etc.), the datasets that matter, the relevant communication and reference games, the communities of researchers involved, etc. In the context of the common semantic coordinate system, these authority functions generate hierarchical landscapes of data, works, researchers and conversations. Each distinct authority function emits a different reflection of collective intelligence. The production of scientific authority is thus neither overwritten nor masked by opaque, uniform algorithms based on purely quantitative data. On the contrary, the algorithms are transparent, they are as varied as the imaginable authority functions and they are based not only on counts and engagement measurements but also on qualitative data: semantics, rules, roles, communities, etc. From then on, a reflexive loop can be established between the acts of meaning-making and the reproducible exploration of the consequences of these acts, in the comings and goings between the scientific activity and the progressive discovery of its effects on authority and belief.

Conclusion: The Mission of the Digital Humanities

This small manifest does not offer standard, protocol, file format, application or platform. My only technical recommendation is the use of IEML, a language compatible with any of the items listed above. The abstract machine of reading-writing or, if one prefers, the reflexive collective intelligence architecture evoked in this text, is first of all a guiding idea, a direction of evolution that will accommodate the multiplicity and the evolution of tools. It is not necessary that all of its functions be implemented to start carrying it out. A step-by-step approach based on limited experimentation and testing can be considered.

The systemic and multi-layered model of meaning production that is at the heart of this architecture was explained by drawing on the example of the social sciences and humanities research community. But this model can be applied to other types of communities and language games as well. I privileged the humanities because the production of meaning is their very object and their method is precisely critical thought: a dialogical and reflexive use of reason. The humanities also play a vital political role, since they educate the leaders of our societies, determine social phenomena worthy of attention, guarantee historical realities and finally because

they anchor the confidence of citizens in certain explanatory theories and stories rather than others. By working to increase the cognitive capacities, the coordination, the communication and the reflexivity of the research community in the human sciences, we work at the same time to the development of critical thought for the city as a whole.

But the proposed virtual architecture does not take the community of researchers in the human sciences as an intangible and a historical given to which offering new methods would suffice: it draws a possible metamorphosis. Let us remember what has happened since the Renaissance. In a few centuries, the practice of writing and reading has extended beyond the community of clerics and scholars to encompass the majority of the population. Building on print communication, a scientific community independent of the church has emerged, with distinct rules of authority production. In the midst of Latin Christianity, the Reformation accomplished a revolution that is more ecclesiological than theological. Indeed, it is primarily the forms of the community that have changed, including the rejection of the Roman monarchy, the end of the formal distinction between clerics and the faithful, the abandonment of monasticism (another form of separation) and the freedom of reading and interpreting the sacred text, now available in vernacular languages. Then perspectives of salvation oriented toward this world—human rights, new ideologies with scientific pretensions—have competed with revealed religions. In turn, the emergence of the algorithmic medium will probably have long-term effects on the structure of communities and the forms of their beliefs. How will the University evolve? Remember that this institution was created by the Church. Moreover, before modern times, whatever the cultures, institutions of high knowledge were of religious essence. In the continuity of their past, contemporary academic institutions—though they are dechristianized and no longer supported by revelation—have kept a function of producing and disseminating belief. Suppose now that the scholarly uses of the Internet, with their principles of openness, transparency and reflexive collective intelligence, are spreading. These uses are obviously not limited to members of the academic community.

Each community (be it a city, an association, a company, etc.) produces data and will soon have the technical means to analyze it. The digital humanities are intended to accompany these communities on their learning path. Therefore, it is likely that the good practices of human science research—with the authority that emanates from it—will spread well beyond the contemporary limits of the academic community, much as the distinction between clerics and faithful at the time of the Reformation. And to spin the metaphor, this time, the reference text is no longer the Bible, the Koran or some sacred canon but the expanding hypertext in which the humanity reflects, with its existence, its creation of meaning.

In the abovementioned schema, the digital humanities community extends beyond the institutional boundaries of the university to bring together a critical thinking pole that illuminates as much as possible the emerging global digital city and, by their very practice, pushing back the hold of the dark side. Far from being monolithic, this pole of the humanities is animated by a multitude of conversations between researchers who produce and interpret data. Rather than dogmatic 'scientific truths,' the humanist

community co-constructs and disseminates beliefs. But since these beliefs are justified by the transparency of their production process and their authority can be examined, they are knowledge. By respecting certain forms, by forcing its participants to explain their approach and to qualify their references, the new humanism promotes a positive slowness of communication and thought, a critical reflexivity that opposes reflex virality and the toxic uses of social media. All this without maintaining the illusion of an unattainable perfection. As the maintenance of a garden is never completed, the dark side is never permanently eliminated. It resurfaces unexpectedly, again and again, even within the groups that think they are the best protected. Let us not ask the humanities more than they can give. It is already difficult enough to expand the field of knowledge and to hold in respect ignorance and contempt.

One last remark, concerning the technical role of the digital humanities. Human collective intelligence is a vast enterprise of meaning creation, mingling action and interpretation. From the invention of writing to that of computers—tools, media and codes regularly increase the fertility of our ecosystems of ideas. Nowadays, it is the field of artificial intelligence that is concentrating in the liveliest way the manufacture of our cultural tools. As soon as decision procedures are formalized, they drive logic engines. As soon as data accumulates, they train algorithms. From computing centers to the interfaces of the Internet of Things, artificial intelligence (AI) is at work. Its results are or will be used in almost every aspect of everyday life (but AI will obviously never take 'power') (see my blog post Lévy 2018). Given the phantasmatic charge of AI and its increasing impact on several facets of human activity, from medicine to military to art to business administration and social media management, many voices have emerged to demand its ethical use, and this requirement has been taken up by researchers and industrialists in the field. What is meant by an artificial intelligence ethic usually comes down to the following two points: banning applications that could directly harm humans (autonomous killer robots being the most often mentioned case) and correcting bias (racist, sexist, etc.) that come from the training data. But even if the precautions against malignant uses and biases of AI are necessary, can its ethical dimension be reduced to these surface defensive aspects? Should not an ethic also aim for positive ends? Rightly opposed to the vision sometimes cherished by Google of a general artificial intelligence (able to do everything), industry's most savvy actors claim that the goal of AI as they practice it is not to replace humans but to increase their cognitive abilities—and in particular their decision-making abilities—both personally and collectively. Very good! But, from an ethical point of view, should we not privilege the increase of the critical or reflexive dimension of intelligence? And to finally reach the root of the problem, should not an artificial intelligence ethically oriented by this finality accurately reflect, and thus take into account, the collective creation of meaning that is at the heart of human intelligence? This creation of meaning is precisely what occupies the humanities. If the latter's mission is to cultivate critical thinking and reflexive collective intelligence, they must meddle in engineering and work on practical orientation as well as the theoretical enrichment of artificial intelligence. They should follow the example

of the great printers and architects of the Renaissance—engineers, even industrialists—who were also humanists: artists, scholars versed in languages and the great texts of the tradition.

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Pierre Lévy is a philosopher who devoted his professional life to the understanding of the cultural implications of the digital technologies, to promote their best social uses, and to study the phenomenon of human collective intelligence. He is fellow of the Royal Society of Canada and received several awards and academic distinctions. He has published a dozen of books on digital culture that have been translated in more than 12 languages. He is currently professor at the University of Montréal (Canada). His book *Collective intelligence*, published in 1994 and translated in several languages, is still inspiring young researchers in cyberculture studies. He is the inventor of the Information Economy MetaLanguage (IEML), the first philological language endowed with computable semantics.

Chapter 4
Perversities or Problems in the Rise of Peer Production with Knowledge Socialism: Collegiality, Collaboration, Collective Intelligence

Timothy W. Luke

Introduction and Overview

These critical reflections focus on both the existing and emergent conditions that underlie why and how a 'knowledge socialism' plausibly could develop from within the global machinations of 'the information society', 'cognitive capitalism' or 'the knowledge economy.' At the same time, these thoughts recognize that there are strong dampening pressures, assuring such a transition from a mode of production dominated by capitalist juridico-legal structures of state power, corporate ownership, and managerial control will not happen without dogged resistance, even though a knowledge socialism lies latently in the workings of global capitalism today. Hence, this study only outlines provisionally some of the reactionary perversities and problems, which arise if and when such a historic transition becomes more imminent. Attempting to assess the immanent dynamics of revolution and resistance, such those unfolding in today's tremendous changes in knowledge production, consumption, accumulation, and circulation from the global socialization of capitalist high-technology culture, always is a hazardous undertaking. Nevertheless, it also is important to review a few 'thought experiments' to assay for what could be done.

Clearly, today's concrete manifestations of 'post-industrial society' (Bell 1973), 'the informational society' (Luke 1983, 1989), 'the knowledge economy' (OECD 1996), and 'cognitive capitalism' (Boutang 2012) are plagued by many problematic perversities in terms who dominates whom amid these titanic transformations. Despite the meteoric rise of seemingly democratic, liberatory, or socialist peer-to-peer production and consumption, many of these perverse problems are tangled up within the dialectics of informational value in which, as Brand asserts:

T. W. Luke (✉)
Virginia Polytechnic Institute and State University, Blacksburg, USA
e-mail: twluke@vt.edu

Information Wants to Be Free. Information also wants to be expensive. Information wants to be free because it has become so cheap to distribute, copy, and recombine—too cheap to meter. It wants to be expensive because it can be immeasurably valuable to the recipient. *That tension will not go away.* It leads to endless wrenching debate about price, copyright, 'intellectual property,' the moral rightness of casual distribution, because each round of new devices makes the tension worse, not better. (Brand 1987: 202) (italics from the original)

The radical on-going reconfigurations growing around today's most basic productive forces thrive on this contradiction. Because 'information wants to be free' in light of its increasingly low production, circulation, consumption, and accumulation costs, 'knowledge socialism' lies very close to the surface in global capitalist markets. Yet, because 'information wants to be expensive', given how those receive, recode, or recombine it, 'knowledge capitalism' continues to grow by eliding its inherent tendencies for profit to match the personal moral calculi of those who otherwise might push for the greater socialization of knowledge and valorizing benefits. These explosive contradictions also continue to be mystified in the mainstream mythologies of exponential technological innovation that dominate mass media coverage, eclipsing those tendencies that reveal how much 'knowledge socialism' continues to be a materially significant possibility.

Due to such tensions, total transformations are blocked. No society has seen either the fruition of a resilient socially-informed individuality, the transcendence of destructive capitalist cognition or the validation of more than economic knowledge, which Bell (1973), Drucker (1993), and Peters (2019) all have anticipated would soon come from an information society's higher planes of ethical, intellectual, or moral life. The existing material forms of cognitive capitalist production in 'informational society' (Luke 1989) with its underlying 'knowledge capitalism' (OECD 1996) instead constrain their development by blocking, dividing, or suppressing the ever-emergent social forces of 'knowledge socialism', globally and nationally, collectively and individually, economically and politically.

These tensions are hobbling larger technological, social, and political revolutions pent up along this fault line. Clearly, 'no social order ever perishes before all the productive forces for which there is room in it have developed; and new, higher relations of production never appear before the material conditions of their existence have matured in the womb of the old society itself' (Marx 1859/1975). This transition is a concrete possibility as well as a task which some groups of cognitive capitalist workers, information managers, and critical knowledge analysts seemingly are setting for themselves, because 'the material conditions for its solution already exist or are at least in the process of formation' (Marx 1859/1975), particularly in collegial, collaborative collective intelligence circles that so many service-based, high-tech corporate groups mobilize in their competing intelligent networks to generate economic value and technological innovation.

Amid the policy perversities and political problems to be overcome in navigating this transition, then, one soon discovers some of 'the legal, political, religious, esthetic or philosophic-in short, ideological forms' in which men and women today must indeed become 'conscious of this conflict and fight it out' (Marx 1859/1975) to command and control the conditions behind the valorization and liberation of

knowledge. Entangled within today's ethical, economic, and ecological crises, then, cognitive capitalism's celebration of knowledge is fully conflicted. This dialectic of domination and liberation in the polyvalent values of information is today's key contradiction: 'it is also a flow of beings and things, a *current* that runs through fiber-optic networks, through high-speed train lines, satellites, and video surveillance cameras, making sure that this world keeps running straight to its ruin' (Invisible Committee 2009: 58–59).

Consequently, this brief study explores a few of perversities and problems in today's current historical conjuncture, which are retarding the plausibly full constitution of a 'knowledge socialism' as well as slowing the complete transition to knowingly socialist ways of everyday life. In particular, it has three goals. First, this study reviews how the embedded powers of 'knowledge capitalism' and its ideological mystifications occlude the growing powers of an exploitative plutocratic elite that has concretized as 'plutonomy' in the core zones of global post-industrial society and stalls the coming of knowledge socialism. Second, it surveys how the workings of democratic elections in many countries developing knowledge capitalist economies can be derailed from moving peacefully toward knowledge socialism as reactionary 'illiberal capitalist' forces openly and clandestinely seize control over the means of persuasion through disinformation, hacking, and virtual participants trolling across social media platforms in cyber-subversion actions to spoof electoral systems, spread misinformation, and limit participation. And, third, it tentatively advances three different 'thought experiments' that speculate about how the turn toward knowledge socialism might unfold from the on-going creative destruction of knowledge capitalism.

The Contours of Knowledge Contradictions

It seems more and more evident that the apparently civilizing potentials lying dormant in 'the discourse of knowledge economy', which has been feted as a 'neutral, objective and inevitable' aspect of social transformation within the teachings of 'Western-driven economic modernization theory', have not been fulfilled, despite the peculiarly 'progressive discourse that issued out of progress and "development" studies' as implied by the 'kind of evolutionary sequence taught in universities' (Peters 2019: 1–2). The prevailing networks of peer production, professional collegiality, and collective intelligence—locally, nationally, and globally—are making the constitutions of knowledge socialism a material and ideational possibility for developing from within knowledge capitalism. The potentialities are quite concretely real, but they are being blocked by countervailing conservative interests.

Indeed, powerful late capitalist cartels, self-serving cognitive elites, and/or national-statal vested interests, which could be identified as key 'knowledge managers and brokers' (Peters 2019: 1), perversely are doubling down against change through their controls over today's tightly drawn ties of value extraction, noncollegial styles of surplus consumption, and privatized monopolies in all modes of collective

intelligence. These active interventions, in turn, prevent the realization of knowledge socialism. From Amazon, Google, or Microsoft striving to monetize every trace of individual agency online by tracking keystrokes that order books, voice instructions to virtual assistants in the kitchen or phone texts hailing car trips from the gig economy to Facebook, Instagram, or Twitter stirring up, inadvertently or intentionally, flashes of fluid civic rage over a global 24-h news cycle, a national electoral campaigns or a bungled policing efforts at local crime scenes, significant change is being prevented. Common collective commodification crowds out innovative individual intervention in the digital revolution's collaborative engagements of human communities all around the world. While more and more users are experiencing the downsides of 'the services' coming from these oligopolistic corporate providers, their owners continue to fend off efforts to impose public regulation codes, state-directed restructuring plans, and digital rights protection by promising add essentially feeble corporate ethics pledges and cosmetic self-regulation schemes to maintain their control.

Such trends illustrate how the old relations of knowledge capitalist production are not yet ready to be overcome by new relations of knowledge socialism. Inasmuch as the emancipatory metanarratives of knowledge inherited from the enlightenment, like anarchism, feminism, republicanism, or socialism, portend personal and social liberation coming from capitalist technological innovation and market creation, knowledge capitalists are comfortable with enforcing their own conservative biases. Informationalization is an ideal strategy for maximizing more privatized enclosure and rent-seeking strategies by digitalizing the commerce of long-established businesses, the affairs of government or the services of the non-profit sector, which maximizes the profit of knowledge capitalists and slows the awareness of innovative knowledge socialism. Even though more populations and territories are being brought across the digital divide around the planet, the simultaneous realization of fully socialist instrumental rationality, material equality, political liberation, and personal emancipation, which Marx and Engels (1848) had anticipated would be essential for making the transition to more communist ways of existence, are being mystified to stall the flowering of knowledge socialism.

Meanwhile, the rear guard of contemporary illiberal and liberal democratic capitalist interests remain fully committed to deepening their own reactionary variants of 'an economic discourse based on the calculated use of computing power, the significance of electronic networks, the efficiency and quality of knowledge, planning, and progress in R&D' (Peters 2019) whose powers and privileges anchor the survival of global firms like Facebook, Amazon, Apple, Netflix, and Google as well as the ruling elite blocs that mobilize their productive forces against each other in contemporary political, moral, or economic competition domestically and globally. By using the means of mass persuasion and material production, they also tighten their technological, national, ideological, and class hegemony over individuals by cultivating 'the marketing character' (Fromm 2013: 62–63). As communication of many knowledge domains boil down to influencing, persuading, or seducing, capitalism largely defines only the demands that it is ready to supply to human agents

whose character profiles are contoured around learning more about how to experience, know, and manage their 'professional profiles', 'online presences' or 'social influences' through endless cycles of anxiety, desire, consumption denominated 'by having'. Such mass anomie underpins the sign system and material make up of modernity, and contemporary marketing's ideal populations with each and every '*alienated character*', who is 'alienated from themselves, from other human beings, and from nature' (Fromm 2013: 130) (italics from the original).

At the same time, the complex multilayered possibilities of material, juridico-political, and ethical knowledge-driven socialism, as the battle lines are being drawn within global informatic forces of production and consumption operating beneath knowledge-based capitalism, keep erupting here and there. White-hot informatic flashes of popular outrage spill forth in the direct actions of different groups, ranging from those tied to the anti-Wall Street capitalist struggles for the precariat staged by the Occupy Movement in New York City, Philadelphia, and other cities,[1] to insurrectionist green networks of Extinction Rebellion[2] in many OECD countries, and to the anti-green *gilets jaunes*[3] uprisings in Western Europe. Although such visceral calls for upheaval are alluring to many, this analysis asks to what degree the revolutionary politics of richer individual *being* beneath 'knowledge socialism' still are stymied by the politics of 'knowledge capitalism' tied to the reactionary desires of simply *having* more and more. Even as the development of knowledge socialism has accelerated with expanding global literacy, Internet connectivity, online commerce, and virtual education, the new class experts and financial forces sustained by prevailing grids of economic, social, and technological power still are able to coopt, evade, or repress their challengers in the dialectical interplay of reactionary resilience and revolutionary rage.

Plutonomy: The Highest Stage of Knowledge Capitalism

As the shift toward cognitive capitalism accelerated during the Great Recession, it became increasingly clear for a few in the USA, the European Union, and the rest of the world that a problematic new social formation perversely was developing along with 'the knowledge economy'. Post-capitalist society's dependence upon a highly rewarded bloc of well-trained symbolic analysts enabled this powerful minority to consolidate their authority within this new transnational regime. Regrettably, 'knowledge capitalism' cloaked the destructive advent of new plutocratic styles of culture and control, namely 'plutonomy' that have hollowed many societies for decades.

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[1]See https://web.archive.org/web/20120403043222/ and https://www.the99declaration.org/. Accessed 27 January 2020.

[2]See https://www.facebook.com/ExtinctionRebellion/. Accessed 27 January 2020.

[3]See https://www.facebook.com/groups/333589004105132. Accessed 27 January 2020.

Divided between, at one pole, by a rapidly expanding and quite numerous dispossessed underclass, and, at the other pole, a firmly entrenched cluster of wealthy cognitive elites with a raw meritocratic 'winner-take-all' ethos of professional-technical excellence (Lasch 1995). Between them, their growing frictions have been buffered by a shrinking, but still significantly sizeable, segment of middle-income workers tied to outmoded industries, declining prospects, and stagnant incomes. Classified, mapped, and profiled during 2005 by Citigroup to guide its own aggressive marketing campaigns, the social formation of 'plutonomy' (Kapur et al. 2005) has thrived under the canopy of prosperity afforded by knowledge capitalism.

A decade and half after the former Second World of Communist centrally-planned economies in Eastern Europe crashed, the rapid redistribution of wealth upward in those countries through the quasi-criminal dispossession of collective state property by one-time high party and state officials implicitly became the ultimate prototype for everyday life under full-blown plutonomic conditions. With the close-out of Cold War conflict, the new social regimen in these former Eastern bloc countries coevolved with the emergence of an ultra-wealthy top one to five percent struggling with one another for the power to evade slipping away into the immiseration inflicted on most of remaining populations in these post-communist societies. These societies were marred by severe insecurity, deep poverty, familial fragility, and obsolete values tethered to failed states and failing businesses bound together by mystified fables about long-gone historical importance, even though waves of foreign experts and enterprises flocked into their territories to package their rapid dispossession as 'democratic transitions' or 'the advent of capitalism' (Kapur et al. 2005).

Ironically, both Cold War superpowers developed devastating dysfunctionalities in their joint pursuit of 'mutually assured destruction' during their nuclear arms race and endless foreign wars after 1950. In 1970, not long before 'the coming of postindustrial society' heralded by Daniel Bell, the poor in the United States earned more than 10% of all income, while the then rather sparse strata of the 'super rich' earned around 1% of all income. At that juncture, the poorest third of all Americans still received 10 times as much income as the richest 0.01 of 1% in the U.S.A. (Johnston 2005: E1). However, the next 35 years running up into the Great Recession brought an extraordinary acceleration in economic inequality across America (The Economist 2006).

By the turn of the twentieth century, knowledge capitalism had made great advances. Yet, the 96 million wage earners at the bottom of America's class structure earned as much as only 28,000 super-rich individuals at the top of society. The poor's share of all income fell to 5% of all wage earnings, which was a 50% decrease, but the fraction of ultra-affluent individuals saw their shares quintuple to more than 5% of all income in the 2000s (Lieberman 2011: 154-158). Adjusted for inflation between 1970 and 2001, the average 25-year-old male wage earner—or a key household-forming economic agent in the 1970s—made $2.00 more an hour than his counterpart a generation later in 2001 (Johnston 2005: E1), which cashed out as nearly complete economic stagnation for such workers during three entire decades. The Pew Research Center disclosed in 2018 that after inflation,

today's average hourly wage has just about the same purchasing power it did in 1978, following a long slide in the 1980s and early 1990s and bumpy, inconsistent growth since then. In fact, in real terms average hourly earnings peaked more than 45 years ago: The $4.03-an-hour rate recorded in January 1973 had the same purchasing power that $23.68 would today. (Desilver 2018)

The bottom 99% of all Americans from the very poor to the middle class saw an average increase from 1970 to 2000 in total income of only $2710—less than $100 a year for all workers (or about 5 cents an hour raise per year for 30 years); yet, the top 1% of Americans, at the same time, fared far better (Freeland 2011). Their average annual incomes rose from $20.3 million to $24 million from 1970 to 2001 (Johnston 2005: E1) as the US shifted from late industrial democracy into the early stages of a plutonomic order. 'Between 1979 and 2007', these gaps underscored the advent of post-industrial society as 'household income increased 275% for the wealthiest 1% of households. It rose 65% for the top fifth. The bottom fifth only increased 18%', even though these changes include the elaborate retributive payments through all forms of welfare transfer payments and services in kind (Amadeo 2019).

Remarkably, knowledge capitalism's plutonomic qualities took hold, even though the 'populist rebellions' of H. Ross Perot, Sarah Palin, the Tea Party, Jesse Ventura, and even Donald Trump all tried to push back politically against these heavily elitist trends in the 1990s and 2000s. By 2018, the gaps between the typical American CEO and her/his ordinary corporate employees' pay were staggering. In 2017, for example, the CEO of Marathon Petroleum 'made $19.7 million, 935 times that of the median worker's pay of $21,034. Whirlpool's CEO took home $7.1 million, 356 times that of its average employee pay of $19,906. Honeywell's average worker pay was $50,000. Its CEO earned $16.8 million, or 333 times that' of its typical employee (Amadeo 2019).

A global economy with such performativity-obsessed plutonomics at its core occludes this wildly unequal, disparate, and worsening maldistribution of material goods and services locally, nationally, and globally, with knowledge capitalist ideologies, which reassure all that the next rung up to material success always lay waiting for them by retraining, more education, new credentials. This multigenerational inequality is considerable. Even though all incomes rose in the USA, the top earner's income grew more rapidly. Looked at in terms of hourly wage rates, steady growth in the average household's earnings in the US topped out in 1973—the year President Nixon was inaugurated for his second term (Lind 2010).

While these probes of plutonomy only tap into trends across the USA since the late 1970s and early 1980s, the international scope of plutonomy also is just clear, divisive, and substantial. Running through the fluid channels and virtual collectivities of empty prosperity, the production of higher-value added services and low-cost/high-value goods that employs nearly 80% of the US workforce totally eclipsed the importance of the nation's older extractive and industrial economies. Generating profits from an increasingly high-tech informational commerce over the Internet, in mass media productions, from the high-end electronic gear carried by jumbo jet freighters, or out of the workings of finance/insurance/real estate deals, the plutonomic regime of

relentless rationality took hold worldwide under banners flown by 'post-industrial society' and 'knowledge capitalism' from the Reagan years to the times of Trump.

During the bubble economy of the early 2000s, the market analysts at Citigroup made a bold cultural assertion: the world was dividing virtually every nation-state into two very different and quite divergent blocs. One bloc is 'the rich', 'the winners', or 'the best'. Individuals, who were prospering at the pinnacle of their businesses, professions, and societies, constituted the center of gravity for the consolidation of 'a plutonomy', which has had certain specific requirements, namely the creation and cultivation of 'the poor', 'the losers', and 'the rest'.

For plutonomy, there is not a typical market agent that can be tagged as 'the U.S. consumer' or 'the U.K. consumer', or indeed 'the Russian consumer', There are super-rich consumers, few in number, but disproportionate in the gigantic slice of income and consumption they take. There then are the rest, the non-rich, the precari-atarian many, whose incomes account for surprisingly small bites of the national pie (Kapur et al. 2005: 2). Hence, all accounts of plutonomy highlight how 'the Best', like Bill Gates, Jeff Bezos, Warren Buffet or Meg Whitman, are striving to make everyday life a bit better for 'the Rest', even as their disruptive technologies aggravate poverty in more and more households.

Marazzi tries to define this process objectively by tagging consumers as 'copro-ducers of goods and services' (2011: 113) in cognitive capitalism; but, in fact, such consumers, creditors, and contractors also coproduce, and conjointly incur, the 'bads and disservices' that contribute to the miseries of plutonomy. The destructive creation of profit from their common defrauding, as they accept the shoddy goods and suffer the shabby services provided in this corrosive commerce, is the perfect non-place that plutonomy engineers for the non-plutonomic classes. Paying down deep debts on assets that have suffered steep deflation in their value, price, and quality out of the fear of not getting to borrow on such deals in the future by admitting bankruptcy or insolvency truly does create a new profit machine 'in which one's entire life is put to work' (Marazzi 2011: 113).

The common good of all seeking commonwealth out private investments in public exchanges dissipates under plutonomics into

> capitalist control over common goods, they produce poverty as 'common poverty,' moments of deconstruction-without-reconstruction of social economies based on horizontal coopera-tive relationships… transforming debt relations into control over forms of life, into austerity and poverty. (Marazzi 2011: 119)

Arguably, this universalization of indebtedness under plutonomy, explicitly or implicitly, motivates most in the ranks of all owners and workers, managers and managed, controllers and controlled to practice and perfect 'indebtedarian' action. As debt relations suffuse almost social relations with the creative, and yet corrosive influence of private equity, venture capital, and hedge fund reasoning to 'get ahead as a winner', 'tag along as a player' or 'fall behind as a loser', the ever-shifting lines between negative and positive net worth define the distinctions between the leaders and the laggards.

By the same means of valorization, the complex calculi needed to measure, mark, and manage these vortices of gains and losses that are central to the dynamism of 'knowledge capitalism'. On the one hand, the means of communication signal to everyone through corporate advertising how acquiring debt equals the freedom to live, enjoy more, and command better credit. And, on the other hand, the means of communication also attune everyone through the mass media why debt constrains choice, halts living so large, and serves always the creditor first in endless cycles of knowledge capitalist-assessed borrowing, payment, refinancing, and expenditure to valorize the signs of desire and attunements of domination (Fischer 2019).

As the froth and foam of the stock market and real estate bubbles burst, they revealed how 'knowledge capitalism', as a regime grounded as deeply in widespread patterns of corruption and fraud as the trends of growth and innovation, computerized the commercial churn behind growing inequality. Despite their use of highly 'social-ized knowledge' in vast telecommunication and computing networks, it is clear that plutonomic elites are not always rich because they are the best (Baily et al. 2008). Indeed, as they win, such elite meritocratic interests tend to take most, if not all, that they can, legally or illegally, ethically or unethically, openly or surreptitiously (Brenner 2002; Hacker and Pierson 2010) through the precariat's indebtedness to the ruling plutonomic blocs.

Redesignating plutocracy, plutarchy, or simply predatory oligarchical elitism as 'plutonomics' in commercial sociologies, like those written by the Citigroup analysts in 2005, attempts to naturalize, if not fully ratify, the development of incredible income inequality and wealth in knowledge capitalism. Today 'knowledge capi-talism' works with ruthless rapidity. This wealth can disappear in quick speculative bubbles, or it can multiply in more calculating investment ventures. Still, its profits rarely trickle down in sufficient volume to raise the well-being of households beyond the top 10% of society.

Plutonomy then coincides perversely with an industrial and infrastructural disac-cumulation that can be linked to knowledge capitalism. While the Gilded Age of the 1800s in America rested upon new rapid and elaborate modes of industrialization, the rate of investment in new industrial technology, research, and plant has declined across the US since the late 1970s. American firms still make major investments, but they often easily choose to deploy them abroad with foreign partners at many other sites around the world rather than at home. Hence, the fine line between a plutonomy, plutarchy, or plutocracy is a fuzzy one (Tronti 2019).

Furthermore, beyond the never-ending putatively rational calculations of who is 'in the black' versus who is 'in the red', the kinship between plutonomy and a klep-tocracy becomes evident when one senses how plutonomics, in far too many bizarre respects, sociologically resembles the illiberal rampages of 'Putinomics' in Russia, Eastern Europe, and many Middle Eastern or North African nations (Miller 2018). From the commanding heights or inner cores of such twenty-first-century 'guided market systems', it appears illiberal indebtedarian ideology brazenly engineers actu-ally capitalist relations to assure those 'on top' or 'at the core' will continue 'in the

black' to attain their net positive worth by maintain the ever-more engrossed negative worth of those 'down below' and 'beyond the core' out in 'the red' rising tides of dispossession, disaccumulation, and disinformation.

In 2011, for example, one out of every five adult male workers in the U.S.A. was unemployed, and usually for around 20 months, if not two to three years plus. In July 2018, the jobless level was 3.9%—the lowest it had been since President Clinton's last year in office during 2000.[4] Nearly, a decade later, then, many more workers so hold jobs. Yet, these employment opportunities typically come without pensions, certain hours, good health care benefits or decent hourly earnings. Data miners, wage garnishments, legal judgements, shadow bankers, and government agencies, however, insure that most of these workers' hearts and minds remain firmly governed under plutonomy as 'the debtor' serves collective life of knowledge capitalism by covering 'the creditor' (Lazzarato 2012).

In many hot urban economic growth zones powering knowledge capitalism, like Seattle, Washington or Silicon Valley, California fully employed people are homeless, living in motor vehicles, tent camps or municipal shelters due to their inability to pay high rents on conventional housing. The 'best labor market in 50 years' in the USA, then, has not led to the best everyday life for workers in five decades, because there is a general crisis of affordability for most consumers. Knowledge capitalism obviously has not abolished poverty, even though it has enabled plutonomy to flourish. And, the virtuous ends of ever greater commodious living that Smith (1987) believed would come to all in different measures from a prosperous commercial marketplace have proven to be elusive, empty or eliminated as the indebtedarian regime of 'ruling through debt' dominates many of knowledge capitalism's most productive centers of growth to attain 'fully automated luxury communism' (Bastani 2019) for the 'one percent' now, and maybe someday for some more here and there among 'the 99%' being left behind for now.

Disinformation War and Knowledge Capitalism

After the Cold War, the US prematurely rejected its one-time enemies as existential threats, while failing to anticipate new waves of continuous aggression, from within and without, over multiple telematic networks, through digital infrastructures or global mass media. Increasing geopolitical anxieties and economic insecurities in the former Soviet Union's successor states in 1991, and the rise of reactionary party oligarchs, new domestic mafias, and foreign carpet-bagging investors led to a failed transition to liberal capitalist democracy in the new Russian Federation. Its illiberal ultranationalist oligarchs, in turn, reconfigured Russia's domestic civic life

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[4]See National Employment Monthly Updates at https://www.ncsl.org/research/labor-and-employment/national-employment-monthly-update.aspx. Accessed 27 January 2020.

around rigged elections, feeble political parties, compliant journalists, and revitalized Orthodox Christianity, which has all cashed out after 2000 as a faux 'democracy reconstituted on the basis of a practice of political violence' (Invisible Committee 2009: 11).

Knowledge capitalism's many openings for disinformation campaigns waged brazenly in the mass media, or clandestinely through computing networks, have provided new means for delaying the advent of knowledge socialism by seizing control over the productive informational forces mediating means of communicative persuasion. And, these interventions clearly are tied to 'particular dates and places, and occur in particular locales or within specific institutions or organizations,' like campaigns and elections whose outcomes tip 'how we shape or direct our own and others' conduct' (Dean 1999: 27).

Bizarrely, in a manner not expected by Beck (2000: 223), 'the alternative' for economies and societies, once set out by elections, leaders or parliaments, is indeed still expected to arise from public policy and parliamentary debates about new laws, but not meditated through the misinformative uses of microelectronic network subterfuges or aggressive disinformation media campaigns, like those during the June 2016 Brexit referendum in Great Britain or the 2016 US presidential campaigns. Ironically, microelectronics and the information media do generate new sites and systems for organizing strange new 'post-truth' styles of just-in-time subversive intervention. Turning the periodic change of government officials for democratic electoral institutions over to programmable, electronic, digitized platforms for voter registration, individual ballot-casting, and election day tallies—often with little to no backup or redundant systems for nonelectronic voting as the 2020 Iowa Democratic Party caucuses illustrate—typifies the cognitive capitalist ideological bias toward selling out everything, all-the-time, everywhere to knowledge capitalism's on-going growth.

In the same manner, voters' preference formation in various public discourses also are now electronically mediated through the distorting operatics of social media platforms. In addition to conventional broadcast, cable or satellite media, the content of partisan debates, candidate self-presentation, and party fund-raising are all made far more feasible with the personal hand-held electronic devices. Yet, these communication technologies, as the 2016 and 2018 elections in the US have shown, are easily hijacked by malevolent hackers, bot-based misinformation waves, and outrageously false assertions ginned up over false user accounts. One-time long-established national imagined communities that buttressed stable democracies now find their incumbent and challenger political coalitions losing legitimacy and effectiveness inasmuch as the machinic modernization pushed by knowledge capitalism contaminates collective intelligence, voter collaboration, and partisan collegiality in collective imaginaries of national unity with toxic misinformation.

To the degree that mass democratic politics of the nation-state, province or city itself is now 'dominated—and hence passively experienced—space which the imagination seeks to change and appropriate' (Lefebvre 1991: 39) in rapidly rising and falling daily news cycles, citizens increasingly cannot fully trust the modes of communication, means of persuasion, or methods of organization that the stability of their governance rests upon (Graeber 2013). Whether it is purposefully vicious

domestic propaganda, surreptitious foreign subversive meddling, or self-serving individual demagogic distortion, the once more objective criteria of public discourse are being lost in a fog of titillating mean-spirited gossip on social media platforms as well as mainstream media that recycle this corrupting discursive drift in their own efforts to sustain some semblance of meaningful political debate.

Struggles for elected office are contests to retain or take political power, but the virtualization of such basic institutional practices—from voter registration, campaign fund-raising, public debate to election rituals, polling practices, vote counting—has made them remarkably brittle. The calculations of interest and preference behind voting have been shaped by marketing discourse for decades with rituals of mass-mediated preference generation that has made them increasingly 'both intentional and non-subjective', which leaves populations, as Foucault might argue, 'imbued, through and through, with calculation: There is no power that is exercised without a series of aims and objectives' (Foucault 1978: 94–95) that 24 × 7 opinion polling maps and manages. Such partisan affinities cannot be tracked back precisely to 'the choice or decision of an individual subject', which makes their subversive simulation more possible, and even politically plausible since each person's, precinct's, or province's 'vote' is processed communicatively to the degree that their historical trendlines, psycho-demographic profiles, and contingent concerns have been studied so thoroughly each vote's aggregation carries operational logics that arguably are 'perfectly clear, the aims decipherable' (Foucault 1978: 95). Hackers, however, now rob trust from the vote itself by tampering with overall tallies and more insidiously contaminate the political debate running up to the election with what is decried as incredible fake news, outright lies or fabricated images that voters before voting often treat as real news, raw truths, or authentic depictions on YouTube, Twitter, or Facebook.

Knowledge capitalism's cybernetic systems have reformatted post-industrial societies entire rhetorical 'systems of neutralization and equivalence' through decades of image engineering and mass marketing that has made their partisan motifs of meaning and styles of belief 'comparable within the capitalistic economy of flows', which both domestic legitimate human participants and foreign (or domestic) non-human bad actors now find it 'necessary to hide them, cut them off, make them over, or better yet transform them from the inside' (Guattari 2011: 79) in order to shape electoral outcomes.

Organizing new candidate appeals around their authentic tweets, posts, and blogs is not much different from opposing their campaigning through falsified, robotized, or mobilized counter-tweets, anti-posts, and reactive blogs. Political stability, as the US, Great Britain, and other countries have shown since 2016, is much more fragile due to the main product of knowledge capitalism: continuous systemic turbulence. How knowledge socialism might emerge politically as an effective alternative is quite unclear, since its advent could easily be decried as the result of an illegitimate foreign or domestic illicit seizure of the forces of mass persuasion rather than the rational choice to transform authentic relations of civic communication essential to stable social reproduction.

Knowledge capitalism should not maintain any pretense of its core invulnerability, since the complexity, density, and porosity of its platforms are marked by recurrent tendencies to fail. Even though its professional-technical operators labor continuously to keep its multilayered systems up and running, each crash, hack, or intrusion is arguably essential to build and test the knowledge such capitalism wishes to sell. Yet, knowledge capitalists still mystify these realities on the landscape of cybernetic events (Virilio 2000). As a result, 'it is precisely due to this architecture of flows' that makes each contemporary democratic political order 'one of the most vulnerable human arrangements that has ever existed. Supple, subtle, but vulnerable… the world would not be moving so fast if it did not have to constantly outrun its own collapse' (Invisible Committee 2009: 60).

The collective intelligence of knowledge capitalism continuously recalibrates the defense of today's fluid, global, and unstable public order for liberal democracies and illiberal nondemocracies alike. This stark boundary condition is essentially 'beyond good and evil' for contemporary civic life. Instead these channels of control work through the circuits of relative danger and safety. Foucault's historical sense of 'this present' reality for human government seems accurate. That is, at the conjuncture between knowledge capitalism and knowledge socialism, as decisive moments in society's collective purpose, it is,

> … not that everything is bad, but that everything is dangerous, which is not exactly the same as bad. If everything is dangerous, then we always have something to do. So, my position leads not to apathy but to hyper- and pessimistic activism. (Foucault 1997: 256)

For the sake of the knowledge socialism to become more fully emergent, and the vestiges of knowledge capitalism to be able to pass, these divides cannot be ignored. And, they should not be neglected until they disappear.

For Knowledge Socialism: The *Gedankenexperiment*

Ironically, the dramas of knowledge capitalism, despite their grounding in specific corporate-approved networks of peer production, collegiality, and collective intelligence, still work, blatantly or ironically, toward advancing many of the goals that another mode of production leaning toward knowledge socialism would fulfill. At this conjuncture, however, the liberal and illiberal economic and political elites at the core of knowledge capitalism appear intent upon maintaining their transnational plutonomy, while keeping effective legal, political, and technological challenges to their position, power, and privilege at bay. The promise of attaining full knowledge socialism, which could enable many more people enjoy a greater material and ethical life than the minimally acceptable existence endured across the world by millions, seems more preferable. Yet, it continues to be postponed, because paralyzing mass disaffection and/or dangerous populist impulses push many people to accept the changelessness, dependence, ineffectuality, and passivity that knowledge

capitalism packages and sells as the stuff of humanity's endlessly invented future where knowledge always must be put to work rather than set loose to enable liberation.

At this juncture, it is useful to engage in some provisional 'thought experiments' with knowledge capitalism to speculate about how the constitution of a radical consciousness and revolutionary changes in knowledge capitalism might occur, and by what paths a transition to more knowledge socialist forms of life could unfold from existing the collegial, collaborative collective intelligence of knowledge capitalism. Even though these experiments are basically conceptual speculation, they link back to various historical precedents tested over the past century to foment reformist and revolutionary transitions of socialist modes of production in a world mainly still under the coercive command and control of capitalism in many regions around the world during the nineteenth and twentieth centuries.

A General Crisis

For Marx and Engels (1848), the transition from capitalism to socialism would emerge from the internal dynamics of capitalism's own cycles of creative destruction as competitive market forces, crude state domination, and constant technological innovation push the possibilities of nearly complete material abundance for all against constantly growing unjust exploitative expropriation of this wealth by a few. That is, a 'general crisis' of immiseration—in which more and more of the proletarian working classes are rendered destitute by the growing sophistication of capitalist production would coincide with the rapacious expropriation of the expanding social surplus coupled with falling rates of profit enjoyed by various fractions of the bourgeois owning classes—would come inexorably to shake apart capitalism.

In this vision of the transition to socialism, the mendacious control of the few over the liberation of the many in late capitalism would end in a fashion parallel how the rising urban bourgeoisie repudiated their fealty to dynastic overlords as they shook off their domination through reforms and revolutions during the hard-fought victories of capitalism over feudalism across Western Europe. Marx and Engels foresaw the proletariat no longer willing to endure brutal conditions of overwork, poverty, or unemployment as their jobs are engineered out of existence by high technology, exported to lower-wage sites of production or eliminated due to falling demand for the products of their labor, and many among the bourgeoisie losing control over their livelihood, experiencing liquidation of their capital, and becoming victimized themselves by shrinking, but most brutal, remnants of the ruling/owning/managing classes (Marx 1849/1975).

The parallels are far from exact, but the impact of quickening informationalization on all aspects of late knowledge capitalist life, as a strategy to prop up control from its plutonomic commanding heights and paralyze effective political resistance to its power, is becoming more and more apparent. As online commerce displaces face-to-face corporate business transactions, commodity engineering, seasonal shopping, product development, consumer banking, and even the daily purchases of food and drink, knowledge capitalist-driven markets are hollowing out, if not crushing, the cultures of commerce that the wealth of nations traditionally required. Workers

and smaller businesses are suffering from the impact of failing enterprises, more underemployment, falling real estate values, permanent losses of once rewarding careers, shrinking vocational opportunities, precarious levels of material survival, and increasing powerlessness. Even though 24 × 7 tracking of their individual actions generate the data that drive the super-profits behind the general crisis of knowledge capitalism, the general dispossession of all individuals to extract their valuable data is not yet fully recognized as one of the key leverage points for workers, users, and consumers to turn toward knowledge socialist modes of production and away from plutonomy. When the realization comes to the datafied precariat, being a class-in-itself that has the material capacity to act as a class-for-itself, it could end its exploitative datafied precarious existence, collectively and individually, in general crises for cognitive capitalism.

A Great Refusal

For Marcuse and the New Left (Lamas et al. 2017), if only for a brief moment, collective defiance, disobedience, and disruption promised to be a road to freedom. Here, 'thought experiments' should continue by looking beyond the general crisis that considers how deep reform or definitive revolution might arise from essentially refusing 'the terms and conditions' of knowledge capitalism. Under the regimen of coercive compliance, another possible path out of knowledge is to flatly just refuse to pay, play, perform or provide anything. By striking to keep their data for themselves, demanding to be paid fair rates for the use of their data beyond simply being allowed to use networks and devices they already pay exorbitant costs to access and operate, calling for full socialization of all data by civil society to serve collective educational and economic advances or exerting a common 'great refusal' (Marcuse 1964) to submit to the conditions of use, subscription, operation, management, and control placed upon them by cognitive capitalism, the reification of reality might fragment.

More militant and rebellious individuals might well confound systems that presume their passivity as users and optimize their operators agency to function. Why accord the platforms, networks, and devices such immediate compliance? To counter the growing automation, informationalization, or robotization of everyday life, individuals might simply walk away. Refusing to accede to a mode of materiality whose 'embedded intelligence', 'smart devices', and 'ubiquitous computing' constitute an open invasion of what conscious, free, moral, and self-governing communities should defend as their spaces of liberating possibility would be a radical reform, if not a real revolt, against cognitive capital's coercive control through the prescriptive restrictions of 'social media' that seduce individuals and groups into believing 'resistance is futile'.

Going off the grid, creating subversive micro-networks, shifting into the 'dark web' full-time, resisting 'artificial intelligence' everywhere it is being imposed on society, derailing job killing automation, sabotaging mindless robotization of once culturally enriching labor or spurning the cyber-mechanization of leisure are all plausible means for refusalist hacktivism-minded groups to begin bringing knowledge into more socialist modes of productive action. By prying open the sealed 'black

boxes' of cognitive capitalism's enclosure of increasingly dehumanized and dependent clients waiting to be streamed with the latest corporate content, users could refuse believing this all is essential for their empowerment. In fact, 'the revolution' need not submit to being YouTubed, Netflixed, or Primed. And, it might thereby surpass 'the general crisis' to awaken many to see other better modes of production and ways of everyday life that lies beyond the electronic enclosures of their digital domination under global plutonomy.

Grids for Revolt

As Gramsci (1971) considered the role of workers councils and the Communist Party of Italy in transforming his country's unevenly developed economy, his sense of Marxism as a 'philosophy of praxis' stressed the importance of workers organizing collectively at the local, city, and factory level. From these points, they could guide the cultural, economic, political, and social development of socialism from within different industries, regions, and markets, while heeding the needs of serving the people they could interact with daily (Piccone 1983). Believing that those who had the skills did the work, perfected the product, and felt the exploitation of market competition, Gramsci felt the worker and other 'subaltern' elements could lead revolutionary changes through 'prefigurative' socialist practices prior to actual revolution-making (Boggs 1977) as 'organic intellectuals' capable of both guiding a high technology toward greater efficiency and equity as well as improving the livelihood of all people. Such political changes would advance the goals of on-going national development and maintain an internationalist commitment to the shared common future of humanity with this popularly grounded socialist mode of production through mental and manual labor (Gramsci 1971).

These Gramscian ideas anticipate the communitarian values of other cognitive collectives of experts, whose vanguard insights and talents have been cited as the key motive force in anti-capitalist resistances to advance popular development in the ever-changing peripheries of 'the Global South' from Marx, Engels, and Lenin to Mao, Nkrumah, and Cabral during the nineteenth and twentieth centuries. For Gramsci (1971), as he tried to account for the widespread acceptance of the fascist modernization of Mussolini in Italy, the significance of cultivating new knowledge, intellectual insight, and moral openness was the foundational tools for revolutionary elements to create adaptable networks between different trades, factories, regions, and industries eager to contest the cultural hegemony of the urban haute bourgeoisie and major rural landowners in their respective zones of control. To resist reactionary alliances between big businesses, the urban entrepreneurs, military forces, traditional intellectuals, state bureaucrats, and rural patrons, who were all eager to pacify 'the subaltern' with a quasi-modernist cultural hegemony promising 'to make the trains run on time' and restoring lost mythic glories of imperial Rome with adventures in foreign expansion, expanded public works, and class compromise, council communism was defiant. Gramsci sought to refine 'the common sense' of the existing masses

in counter-hegemonic movements to articulate 'the good sense' that a pragmatic Marxist 'philosophy of praxis' could develop by realizing the intellectual potential of everyone struggling for transformative change (Gramsci 1971).

These radical notions are also only a thought experiment, but the esthetic values of disaffected computer coders seeking to perfect knowledge socially for the benefit of all able to participate in their open coding communities should not be ignored by the advocates of knowledge socialism. Likewise, the workplace activism by employees of Silicon Valley high-technology monopolies, and the stealthy hacktivism of whistle-blowing government employees striving to awaken popular outrage over government injustices hidden in secret files are directly counter to the secretive non-disclosure constraints of knowledge capitalism. Similarly, the peer-to-peer exchange of new knowledge freely out online among all those committed to causes of public science, racial coexistence, ecological justice, human rights, gender equality, or world peace to oppose the rigid cultural hegemony sustaining today's easy acceptance of post-truth politics, personal greed, white supremacy, male superiority, human powerlessness, and institutionalized militarism also seem to tap into possibilities for attaining knowledge socialism from within knowledge capitalist relations of production. Whether they utilize outmoded, but still alive computer languages, virtual private networks or outlaw dark nets, there are grids for revolt ready at hand for those willing to launch the transition from within the circuitry of cognitive capitalism in plutonomic conditions of control.

Conclusion

These speculative sources of provisional inspiration for knowledge socialists are worth further consideration. Working from already existing visions, regardless of whether or not Marx, Marcuse, or Gramsci are their anchor points, the actual initiation and course of any transition would be difficult to plan. This point is crucial for each *Gedankenexperiment*. How exactly might an actively materialized and mobilized knowledge socialist consciousness be effectively constituted? In what tactical formations should such a socialist awareness crystallize, e.g., radical coder councils, alternative digital platform designs, many post-national nodal forms of computing operations and consciousness that some have called 'splinternets', some strictly time-limited dictatorships of the cyberproletariat or bevies of vanguardist new hard/net/soft/wet/ware dissent movements?

What sort of workable map, at the same time, for making a full transition to knowledge socialism, e.g., the triggering of a credible general computing crisis, plus recurrent radical coder strikes, hacktivist-trained network councils, a truly simultaneous global network outage clicked by massive denial of service attacks, cloud provider coalitions working together across existing capitalist industry/region/country territorial divisions guided by a militant cybersyndicalist manifesto, quantum computing stage-skipping developmental plans, an actually universalizing new visions for cyber-cultural, social media democratic partisans electing themselves and affinity groups

into power, or some inchoate cyborg-communist transition pledged to fulfill immediately the promise of 'from each according to his ability, to each according to his needs'? Or, perhaps as likely, only some, a little or even none of the above?

By the same token, what counter-revolutionary responses might this intervention evoke? Might one see ultraconservative cyber-solidarity blocs forming between major knowledge capitalist social media platforms, total digital diktats issued by state telecom authorities to sanction cyber-resistance work, cyber-sabotage by reactionary pro-system coders, search and seizure of all digital devices not used to maintain the prevailing 'market character' of knowledge capitalism or the deployment of artificial intelligence packages for continuously monitoring human and non-human, foreign and domestic or insurrectionist and conformist modes of computer use? At the end of the day, who would claim the ultimate authority to discipline network traffic as well as individual use of all digital services, and over whom for how long?

At the end of the day, the critical insights of Peters (2019: 1–2) into the diverse economistic discourses of knowledge capitalism evolving around the world are crucially important. Knowledge capitalists keep celebrating their successes as neutral, objective, and inevitable outcomes of relentlessly accelerating socio-technological transformations. That said, these conventionalized ideological messages of 'Western economic modernization theory' generated in the Global North have not been validated in everyday political life afforded to most by knowledge capitalism.

Instead, these peculiar discourses about greater universal progress and increasing local prosperity have developed into the core dictates of cognitive capitalism's cultural hegemony. They celebrate technocratic sagas of objective evolutionary progress ginned up at corporate headquarters, prominent universities, mass media, and government chambers, but they have other purposes at stake. Knowledge capitalism actually is heavily biased, subjective, and tenuous by 'the marketing character' it struggles to sustain by selling cybernetic bits, experiences, and services rather than liberating tools, ideas, and goods, as the thought experiments sketched out earlier suggest.

Knowledge capitalism's perverse political agendas and problematic policy routines rely upon shadows of seduction, subterfuge, or sacrifice to succeed. Their machinations are meant to screen from view the intellectual and material plausibility of realizing new freedoms from knowledge socialism. Here, the deeply embedded perversities of plutonomic position, power, and privilege are heart-breaking, if not completely soul-deadening. The problems of faux freedoms under guided democracy in illiberal cultures make them feel even worse. For those still traveling the rocky roads of plutonomic guided democracy hoping to grab some shred of success from the shrinking options available to them in knowledge capitalism, most opportunity will be denied to them by the allegedly wide-open 'opportunity society' being continusouly constructed by knowledge capitalists.

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Timothy W. Luke is University Distinguished Professor in the Department of Political Science as well as the School of Public and International Affairs at Virginia Polytechnic Institute and State University, Blacksburg, Virginia, US. He writes about digital development, urban political economy and ecology from analytical perspectives grounded in critical theory, environmental politics, social and political theory in relation to issues in global governance and cultural conflict in the knowledge economies of informational society, especially with regard to the theories and practices of environmental management, resilience, and sustainability.

Chapter 5
Postdigital Knowledge Socialism

Petar Jandrić

Introduction

At the Eighth All-Russia Congress of Soviets, Lenin said: 'Communism is Soviet power plus the electrification of the whole country' (Lenin 1920). After the Second World War, people in the Socialist Federal Republic of Yugoslavia took this description to heart: popular names given to girls included Mašinka ('engine'), Turbina ('turbine'), and Traktorka ('tractor'). People at the time must have thought: what girl could possibly object to being named after an engine, an electrical generator, or a farm vehicle? Meanwhile, the USSR and the US were engaged in a technological battle for the conquest of outer space. The need for bigger and faster space rockets, those ultimate phallus symbols, brought about a flood of military funding, which in turn created the Internet. These technological races were hardly ever about 'our' technologies being better than 'their' technologies—they were about 'us' being better than 'them'; about 'our ideology', 'our social system' and 'our way of life' being better than 'their ideology', 'their social system' and 'their way of life'. After the fall of the Berlin Wall, ex-Yugoslavians quietly changed their names; the space race was no more. But technology is no less ideological today than it was in the Cold War; these ideologies are merely manifested in different and often subtler ways.

Technology never does exactly what its makers intended. The birth control pill was initially marketed and sold strictly to married couples, yet it enabled the hippie movement. Mobile phone text messages were designed for internal communication between maintenance engineers, yet they became hugely popular among the general public. And the Internet, developed as a non-centralised communication device for the US military, can be used to support ideologies other than those which enabled its

P. Jandrić (✉)
Zagreb University of Applied Sciences, Zagreb, Croatia
e-mail: pjandric@tvz.hr

University of Wolverhampton, Wolverhampton, UK

creation. The US military was very well aware of these tendencies early on. In 1969, for instance, the US Army Foreign Science and Technology Centre in Washington issued a 500-page report entitled 'Cybernetics in the Service of Communism' (Berg 1969). Media theorists did not lag far behind. Marshall McLuhan analysed Cold War propaganda at the Bilderberg conference the same year, suggesting that the media technologies of the day had perhaps not been as capitalist and freedom-loving as they were cracked up to be. In his words: 'I asked the group: "What are we fighting Communism for? We are the most Communist people in world history!" There was not a single demur' (McLuhan 1987/1969: 373).

Three decades later, inspired by McLuhan's thought probe, Richard Barbrook launched 'Cyber-communism: How the Americans are Superseding Capitalism in Cyberspace' (Barbrook 2000). Reflecting on this paper, which he calls an 'update [of] McLuhan's joke for the dotcom 1990s', Barbrook says: 'Channeling McLuhan, my plan was to argue the exact opposite by saying that the Americans had invented the only working model of communism in human history—and it is called the Internet!' (in Jandrić 2017: 88) Barbrook continues:

> Today, this thought probe can be further extended by pointing out that the Internet of Things is an anticipation of democratic planning. Digital technologies should be used to replace markets and bureaucracies with workers' self-management. As Friedrich Engels said, the Left's objective is to move from the administration of people to the administration of things (1996) [1877]. Dotcom capitalism in the service of cybernetic communism! (in Jandrić 2017: 89)

The Internet has two main constituents: physical infrastructure or hardware, and logical infrastructure or software. In the early days, theories such as cybernetic communism, dot.com communism, and digital communism, along with their cousins cybernetic socialism, dot.com socialism, and digital socialism, had been predominantly developed in the context of software. Looking back at the early years of digital studies, Gabriella Coleman notices: 'for the first 15 years of digital studies, the digital domain was somehow cast as immaterial. The emphasis on infrastructure, all the rage today, was non-existent. I understand the need to talk about things like cognitive labor, but you cannot have cognitive labour without a machine, electricity, servers, and those that maintain the machines. The level of ignorance was astounding'. (Coleman and Jandrić 2019: 546). Commenting on Barbrook's ironic joke, Mark Stahlman similarly observes: 'Software communism, very easy—hardware communism, very difficult' (in Jandrić 2017: 100). Only recently have the ideological underpinnings of Internet hardware development, usage, and ownership received more serious scholarly attention (in the works of, inter alia, Ben Williamson, McKenzie Wark, and Benjamin Peters).

The rapid development of artificial intelligences at the turn of the millennium brought about a great deal of posthumanist thinking, as the relationships between people and machines have started to change. In June 2002, Steve Fuller and Bruno Latour staged a popular public debate with the following claim: 'A strong distinction between humans and non-humans is no longer required for research purposes' (Barron 2003: 78; see also Fuller and Jandrić 2019). This stance can serve as

a starting point for the sociomaterialist movement, which—at least in theory—attributes substantially more agency to technological artefacts than has ever been proposed.

> The use of the blanket term sociomaterialism has been justified by the claim that all of the foundational theories for this approach (ANT, activity theory, post-humanism and complexity theory) conceptualise knowledge and capacities as being *emergent* from the webs of inter-connections between heterogeneous entities, both human and nonhuman. ANT and more broadly sociomaterialist approaches offer the prospect of being able to integrate the material technologies and media found in networked learning into a framework that encompasses people and machines in a symmetrical way. (Jones 2018: 47)

Following developments in biosciences such as sequencing genome and germline gene therapy, our research fronts have turned to development of artificial intelligences, thus turning the blade from digitisation of biology to biologisation of the digital (Peters and Besley 2019; Peters and Jandrić 2019).

These developments bring about the postdigital age, where digital technology is no longer 'separate, virtual, or "other" to a "natural" human and social life' (Jandrić et al. 2018: 893). The postdigital age does not imply that we have somehow all became cyborgs, or that human activities, from the production of artefacts to knowledge development and dissemination, could not be conducted without using computers. According to Andrew Feenberg, it merely means that '[t]he postdigital no longer opposes the virtual or cyber world to the world of face-to-face experience. The digital is integrated and imbricated with our everyday actions and interactions' (Feenberg 2019: 8). However, this lack of theoretical opposition between the digital and the non-digital does not smoothly translate into a harmonious collaboration. 'The postdigital is hard to define; messy; unpredictable; digital and analogue; technological and non-technological; biological and informational. The postdigital is both a rupture in our existing theories and their continuation.' (Jandrić et al. 2018: 895) This chapter historicises the theory and practice of knowledge socialism and offers some considerations for the future from within the postdigital condition.

Knowledge Socialism in Theory

Michael Peters has been developing components of a theory of knowledge socialism across numerous publications since the early 2000s. The term 'knowledge socialism' was first mentioned in Peters' 2004 editorial in *Policy Futures in Education*, where he outlined his research programme for the decades to come:

> One form of new expression concerns what I call *knowledge socialism* to indicate the new struggles surrounding the politics of knowledge that directly involve the academy, and I do not mean simply refer to the role of theory. I am referring to what has been called knowledge in the age of 'knowledge capitalism', a debate that increasingly turns on the economics of knowledge, the communicative turn, and the emerging international knowledge system where the politics of knowledge and information dominates. One issue concerns intellectual property, not only copyright, patents and trademarks, but also the emergence of international

regimes of intellectual property rights, and the accompanying emphasis on human capital and embedded knowledge processes that now drive university management (Peters 2004: 436).

This research programme lists all of the major components of Peters' current understanding of knowledge socialism (Peters 2019), including the view of knowledge as a fundamentally social enterprise, the grounding of knowledge socialism in opposition to knowledge capitalism, the importance of openness (including, but far from limited to, intellectual rights), but also the elaboration of the concept of knowledge cultures (Peters and Besley 2006).

Since coining the term 'knowledge socialism' in 2004, Peters has initiated and participated in, numerous collective research enterprises[1] which have contributed significantly to the augmentation and refinement of the concept. In the last chapter in this volume, we examine the problem of authorship arising from collective nature of Peters' work: 'Of course, to even to use the phrase, *Peters' work*, contributes to the problem that we have outlined above. It is not and will never be Peters' work, while at the same time it is and will always be Peters' work.' (Gibbons et al. 2020, this book) (italics from the original) Authorship aside, Peters' concept of knowledge socialism in 2020 is still far from a full-blooded theory or paradigm. Knowledge socialism is always fluid, always in transition, always in interaction with others—it is a concept built from specific historical circumstances, a concept of being in the present, and a concept of becoming in the future. To understand what knowledge socialism is, and what knowledge socialism might become, we therefore need to examine the specific historical circumstances that contributed to its development.

Over the years, Peters has repeatedly mentioned that his theory of knowledge socialism has been developed in response to various problems entailed by knowledge capitalism (Peters 2004: 436, 2019). This is not the only instance of oppositional thinking in Peters' work. Just a few years before he outlined the first contours of knowledge socialism, Peters (2001) examined the relationship between the two conflicting notions of *homo economicus* and *homo collaborans*. He would later find the notions useful for his examination of knowledge capitalism and socialism (e.g., Peters and Jandrić 2018a: 317). The lineage of *homo economicus* can be traced back to the long tradition of philosophical ideas about the rational, autonomous subject, from Descartes to Kant. There are, of course, important differences between, say, Hobbes and Locke, especially regarding ethics (and all the more so in the case of Kant), but this tradition, on a certain reading, has played a significant role in the establishment of 'the self-interested individual of liberal political economy established by Adam Smith and David Ricardo' or the *homo economicus* governed by 'controlling assumptions of rationality, individuality and self-interest' (Peters and Jandrić 2018a: 82). For Peters, *homo collaborans* of the twenty-first century, based on the figure of *homo economicus*,

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[1]See http://editorscollective.org.nz/. Accessed 12 February 2020.

is committed to three assump-tions that tend to run counter to the collective learning processes that characterize the digital environment. The assumption of individuality is counter posed by collective intelligence (…). The assumption of rationality is contradicted in a networked environment as the ontological basis is contained in the relations between entities (…) the assumption of self-interest again tends to be offset or decentred by forms of collective responsi-bility. (Peters and Jandrić 2018a: 342–343)

Reflecting on Peters' claims about relationships between *homo economicus*, *homo collaborans*, and different forms of creativity, I responded:

your case for primacy of the notion of creative labour over the notion of human capital is of great importance, as it brings a fundamental shift from *homo economicus* to *homo collaborans*. This shift cannot be cut clearly, because—as agreed earlier—the notions of human capital and collective labour are both inherent to human beings. This shift cannot be attributed to the advent of the digital age, because *homo economicus* clearly thrives in the digital worlds. This shift is deeply pedagogical—because it consists of slow transition from one mode of being into another (Standing & Jandrić, 2015). The process of transition from *homo economicus* to *homo collaborans* is primarily related to questions per-taining to human nature, which—in their simplest form—reach down to the old dispute between Darwin's theory of evolution and Kropotkin's theory of mutual aid. Therefore, I would dare to say that the struggle between *homo economicus* and *homo collaborans* has always been there, but digital technologies have created a new battlefield and a new opportunity to challenge the traditional order of things. (Peters and Jandrić 2018a: 350)

This analysis has several important consequences. First, knowledge socialism and knowledge capitalism are much more than political orientations; ultimately, they inevitably touch on questions regarding the nature of the human being. This is why knowledge socialism should be simultaneously developed in theory and practice, and why knowledge socialism urgently needs its own philosophy, including, but not limited to, epistemology, ontology, and ethics. Second, while the conflict between knowledge capitalism and knowledge socialism proved useful when the problem was first formulated, this oppositional view needs to be replaced by a more nuanced approach. In our rupture-and-continuation postdigital reality (Jandrić et al. 2018), conceptual pairs such as *knowledge socialism* and *knowledge capitalism*, *homo collaborans* and *homo economicus*, are no more than imaginary, idealised, black-or-white contraries; we live most of our lives in various shades of grey between those extremes. Third, Peters' *homo collaborans* is firmly situated in the digital environment, yet collective intelligence, relational understanding of rationality and also collective responsibility can perfectly well exist (and did perfectly well exist!) in a world without computers. Knowledge socialism does not need to be digital, but the digital has significantly and irreversibly shaped knowledge socialism. Situated between the digital and analogue, between the technological and the biological, knowledge socialism occupies that uncanny space that some of us like to call postdigital (Jandrić et al. 2018).

If I am right that knowledge capitalism and knowledge socialism perhaps require a nuanced approach that reaches beyond dichotomy, that does not mean that they are at peace with each other. On the contrary—the struggle for knowledge socialism extends much further than epistemology; it extends to questions of privilege and power. The power to define knowledge and establish ownership over the means

of its production and dissemination has always been an epistemological, organisational and political site of struggle. Knowledge capitalism governs our existing knowledge (infra)structures: universities, research institutes, mainstream academic publishers, funding bodies, etc. At the fringes of knowledge capitalism are independent researchers, activists of various stripes, and everyone else interested in different ways of creating and disseminating knowledge. Towards the second half of the twentieth century, the fringes of knowledge capitalism began welcoming important newcomers—computer freaks, hackers and other digital practitioners of all shapes and hues. While these newcomers subscribe to a wide range of ideologies, many of which are very far from (knowledge) socialism, their arrival has significantly disturbed traditional power relationships in the political economy of knowledge. In a recent paper on the development of mainstream academic publishing through a complex interplay between large academic publishers, academics and hacker-activists, Sarah Hayes and I argued that '[p]erhaps for the first time in history, people outside of academia and people residing on its fringes have managed to significantly influence the economy, politics, and practice of knowledge work.' (Jandrić and Hayes 2019: 391) Using a similar methodological approach, I will now explore the interplay between knowledge capitalism and knowledge socialism.

As a rule of thumb, institutionalised knowledge capitalism belongs to what we traditionally call high theory; vernacular resistance to knowledge capitalism, including knowledge socialism, can be typically described as low theory. McKenzie Wark defines these the concepts of high theory and low theory as follows:

> High theory I think of as the scholarly tradition of continental philosophy, as shaped by institutions of higher learning and scholarly conventions of agenda formation, of vetting and authorising statements, and so on. To be a recognised authority of high theory is to be a professor who studied with distinguished professors, who publishes or teaches in distinguished places, and so on. It is a discourse-network based on peer review and competition within hierarchies for glittering prizes.
>
> Low theory is more about how subaltern or subordinate groups form a conceptual language to understand their situation, and to either escape it or struggle within it. One of the great historical examples of low theory is Marxism, but there are many other examples. (Wark in Jandrić 2017: 107; see also Wark 2012: 12)

The borders between high theory and low theory are, of course, far from clear. This book, for instance, is published by a respected academic publisher, edited by scholars of good repute, and all its contributors are affiliated with universities. In front of your eyes, therefore, is a high-theory academic book about a low-theory concept of knowledge socialism. This mixed position may be theoretically uncomfortable, yet it bursts with opportunity (see Jandrić and Hayes 2019). In what follows, I will examine this interplay between high-theory attempts at, and vernacular practices of, knowledge socialism using the example of openness.

The Curious Entanglement Between High Theory, Low Theory, and Practice

In our postdigital reality, we cannot even think about knowledge socialism without reference to information and communication technology—and the history of this technology is a well-documented and ongoing social, political and ideological struggle. Unsurprisingly, Peters (2004) sees a number of key elements of this struggle as the main constituents of knowledge socialism. Probably the most famous and the most far-reaching struggle over information has taken place in and around openness and copyright. When Richard Stallman published his first definition of free software in the (now discontinued) GNU's Bulletin publication of the Free Software Foundation in 1985, his arguments fundamentally challenged the legal understanding of copyright. According to Stallman, '[a] program is free software if the program's users have the four essential freedoms:'

- The freedom to run the program as you wish, for any purpose (freedom 0).
- The freedom to study how the program works, and change it so it does your computing as you wish (freedom 1). Access to the source code is a precondition for this.
- The freedom to redistribute copies so you can help others (freedom 2).
- The freedom to distribute copies of your modified versions to others (freedom 3). By doing this, you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this. (Free Software Foundation 2019)

To legally protect these four freedoms, Stallman invented the concept of copyleft:

> To copyleft a program, we first state that it is copyrighted; then we add distribution terms, which are a legal instrument that gives everyone the rights to use, modify, and redistribute the program's code, or any program derived from it, but only if the distribution terms are unchanged. Thus, the code and the freedoms become legally inseparable.
>
> Proprietary software developers use copyright to take away the users' freedom; we use copyright to guarantee their freedom. That's why we reverse the name, changing 'copyright' into 'copyleft'. (Free Software Foundation 2018)[2]

In 2001, Lawrence Lessig, Hal Abelson and Eric Eldred started the non-profit organisation Creative Commons,[3] which has provided a legal framework for applying the principle of copyleft beyond software. Today, Creative Commons licences have become common in areas ranging from publishing through education to commerce. In the academe, probably the most famous recent initiative is the 'radical open-access plan to ensure scientific works are free to read as soon as they are published' called

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[2]Over the years, the quoted definitions of free software and copyleft have been reproduced all over the Internet, often with slight modifications. This text reproduces the most recent definitions available at the GNU Operating System website sponsored by the Free Software Foundation.

[3]See https://creativecommons.org/. Accessed 12 February 2020.

Plan S[4] (Jandrić and Hayes 2019: 387). In the area of commerce, since its foundation in 2008, sharing platform GitHub[5] soon became the world's largest platform for open sharing of software code and collaboration. In 2018, GitHub was acquired by one of the leading producers of proprietary software, Microsoft, which now releases a huge amount of code into the public domain.

In 1985, Stallman's low-theory Free Software Manifesto was published in a do-it-yourself periodical aimed at computer enthusiasts. His ideas were soon taken up by various activist movements from shadow libraries, free/open/libre software foundations, Creative Commons and many other legal, semi-legal and fully illegal communities and organisations. Slowly but surely, the complex interplay between the proponents of copyright and the proponents of various versions of freedom of information (including, but far from limited to, copyleft) turned huge industries such as film, music, academic publishing and software production upside down. Fast forward a few decades, and these developments have become mainstreamed in high theory. In our recent article, Sarah Hayes and I explored these transformations in the context of academic publishing. We concluded:

> Traditional binary between activists and academics becomes increasingly blurred, and we need to start developing new forms of engagement in knowledge work. … [W]e need to question basic concepts such as 'centre' or 'mainstream' and 'periphery' or 'margin'. In our postdigital reality, they have morphed into formations that we do not yet understand, and they have created (power) relationships which are still unsettled. The concepts of 'centres' and 'margins' have not disappeared, but they have become somewhat marginal in their own right. (Jandrić and Hayes 2019)

Already in 2004, Peters identified this struggle over the openness of information and knowledge as the key component of knowledge socialism. In *The virtues of openness: Education, science and scholarship in a digital age* (Peters and Roberts 2012), *Building knowledge cultures: Education and development in the age of knowledge capitalism* (Peters and Besley 2006), and elsewhere, Peters shows that openness carries multiple ontological, epistemic and cultural consequences for knowledge work—and his vision of knowledge socialism is underlined by a powerful humanistic message focused on equality and emancipation. However, openness has been embraced from all sides of ideological spectrum. Microsoft may have released their code on GitHub, yet, in all its transformations, Microsoft's monopoly on knowledge flourishes and creates more social and economic inequality than ever. With the advent of social networking, free software is now being used for until recently unforeseen forms of appropriation of human labour. 'However, someone like Richard Stallman created the material and philosophical conditions to prevent technological domination through free software, many others create the technological and ideological conditions to capture people's attention and data.' (Coleman and Jandrić 2019: 529) In our age of algorithms and economies of attention, Stallman's dream of openness has been almost completely appropriated by capitalism. Free and open information

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[4] See https://www.coalition-s.org/. Accessed 12 February 2020.

[5] See https://github.com/. Accessed 12 February 2020.

and knowledge are prerequisites for knowledge socialism, but knowledge socialism requires much more than free and open information and knowledge.

At the farthest fringes of the hacker and art communities, there are other low-theory approaches that explore opportunities in and for the digital age beyond freedom and/or openness of information. After decades of experience in European hacker and arts communities, Dymitri Kleiner published an important collection entitled *The Telekommunist Manifesto.*[6] Following Stallman's example of building copyleft on existing copyright legislation, Kleiner advocates appropriating capitalist means of exploitation such as 'joint stock corporations, bonds, rental agreements, copyright licences and the retention of the market exchange of the products of labor' as 'a means of organising production towards the goal of building the economic capacity required to engage in class conflict.' (Kleiner 2010: 50) Kleiner analyses the causes of the capitalist appropriation of Stallman's concept of copyleft and claims that '[d]espite copyleft's beneficial role in forming a valuable common stock of software, it remains problematic when the model is retrofitted back to the domains of art and culture from which dissent against intellectual property sprung.' (Kleiner 2010: 40) Looking for a concept that would be more resistant to capitalist appropriation, Kleiner returns to Marx and proposes a more radical alternative to Stallman's copyleft in the form of copy-far-left.

> In order for copyleft to mutate into a revolutionary instrument in the domain of cultural production, it must become 'copy-far-left'. It must insist on workers' ownership of the means of production. The works themselves must be a part of the common stock, and available for productive use by other commons-based producers. So long as authors reserve the right to make money with their works, and prevent other commons-based producers from doing so, their work cannot be considered to be in the commons at all and remains a private work. A copyfarleft licence must not restrict commercial usage, but rather usage that is *not* based in the commons. (Kleiner 2010: 40)

The Telekommunist Manifesto refocuses decades-old struggles over freedom of information and knowledge from intangible bits and bytes back to a Marxist prioritisation of the material means of production—or, paraphrasing Stahlman (in Jandrić 2017: 100), from a focus on software to a focus on hardware. 'As long as producers operate within the capitalist mode of production, they cannot change society politically. (…) When we employ a commons of productive assets, which have no individual owners but are collectively owned, we retain the wealth we create, and thus the possibility for a new society is within our grasp.' (Kleiner 2010: 50)

Kleiner's proposal still resides deeply in the underground, yet it closely links to economic realities brought about by the rise of companies such as Airbnb, Uber, Amazon's Mechanical Turk, and others. These companies utilise automated online systems, called platforms, which connect providers of services such as accommodation, transportation and computer programming, with users of these services, in exchange for (usually hefty) fees. At the first glance, the concept seems beneficial for everyone. When platforms remove middlemen between users and providers, users

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[6]At the time of writing this text, Kleiner works on the second, expanded edition of *The Telekommunist Manifesto.*

get lower prices of services, service providers get easier access to work, and platform owners get an overhead for their mediation. In practice, however, platform companies have become a rentier capitalism's wet dream. According to Srnicek (2017: 256–257), the platform economy removes traditional worker protections and destroys the social fabric of labour. 'For most of these companies, employees are also hyper-exploited, with low wages and no benefits. The platforms, meanwhile, simply siphon off a rent from every transaction they facilitate.' Yet this is only the beginning of problems associated with platform companies. Echoing Zuboff (2016), Srnicek (2017: 255) shows that 'the fact that platforms require more and more data—just as the old railroad monopolies once devoured coal—means that there is an intrinsic drive for these companies to be pushing up against the limits of what we presently consider the private realm.' Roughly since 2010, platform companies have experienced huge growth, which has disrupted whole sectors of economy such as accommodation and transportation; these developments have inspired a whole new socio-economic theory called 'platform capitalism' (Srnicek 2016).

Mainstream responses to platform capitalism include a mixed bag of strikes, lobbying for various changes in legislation, and bans. Some of these measures have achieved some success: Uber and Airbnb are now banned or strongly regulated in many countries. While often successful, these reactive responses from within cannot bring about fundamental change. Inspired by Kleiner's insistence on workers' ownership of the means of production, in 2016, Trebor Scholz launched the Platform Cooperativism Consortium.[7] The Consortium does not aim at fighting against existing platforms; instead, it has the goal 'to optimise the digital economy for all people' and 'offer a near-future, alternative to platform capitalism based on cooperative principles such as democratic ownership and governance' (Platform Cooperativism Consortium 2020). Platform Cooperativism Consortium currently supports many small-scale cooperatives, but it remains to be seen whether their activities will be able to reach the scale required to have mainstream impact. Nonetheless, however, small, their achievements clearly show that platforms can be successfully used for non-capitalist practices.

In few short decades, Richard Stallman and his followers have changed the world. Their low theory has become high theory, their illegal practices have become legal, and the impact of their work has transformed entire industries. In the process, their ideas have been creatively appropriated for the development of a whole new phase of capitalism. At the same time, Kleiner and his companions still operate underground, write low theory, and develop vernacular practices outside of current legislation and the social imaginary. Their openly and decidedly anti-capitalist theories occupy very little (if any) space in the mainstream, and their practical projects such as platform cooperativism are still in their infancy. Yet this interplay between the centres and margins, between high theory and low theory, is fertile ground for future development of Peters' idea of knowledge socialism.

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[7]See https://platform.coop/who-we-are/pcc/. Accessed 12 February 2020.

Knowledge Socialism in Educational Practice

In 2009, Peters developed two distinct accounts of creativity: 'personal anarcho-aesthetics' and 'the design principle'.

> The first emerges in the psychological literature from sources in the Romantic Movement emphasising the creative genius and the way in which creativity emerges from deep subconscious processes, involves the imagination, is anchored in the passions, cannot be directed and is beyond the rational control of the individual. (…) By contrast, 'the design principle' is both relational and social and surfaces in related ideas of 'social capital', 'situated learning', and 'P2P' (peer-to-peer) accounts of commons-based peer production. It is seen to be a product of social and networked environments — rich semiotic and intelligent environments in which everything speaks. (Peters 2009: 40)

In *The Digital University: A Dialog and Manifesto* (Peters and Jandrić 2018a), we associated the personal anarcho-aesthetics principle to the notion of *homo economicus*, and the design principle to the notion of *homo collaborans.*

Soon thereafter, Peters and I examined a number of practical attempts at the 'creative university as digital public university' (Peters and Jandrić 2018b). Our analysis was based on the framework developed in *Preparing for the digital university: a review of the history and current state of distance, blended, and online learning,* where Siemens et al. (2015) classify usage of digital technology in learning in four distinct generations:

Generation 1—Basic technology use: Computer-based Training (CBT) and websites.
Generation 2—Enterprise systems: learning management systems (LMS) and content management systems (CMS).
Generation 3—Fragmentation and diversification: social media, e-portfolio software and MOOC providers, integrated vendor/publishers.
Generation 4—Distributed and digitally shaped technologies: adaptive learning, distributed infrastructures, and competency models. (Siemens et al. 2015)

At the time, our analyses did not reach as far as knowledge socialism; we only examined some of the most hyped educational institutions such as University College Cork, Ray Kurzweil's Singularity University, Coursera, the Khan Academy, and a few others, through a combination of Siemens et al. (2015) classification and our own theoretical insights. Yet we did reach beyond the dichotomy between *homo economicus* and *homo collaborans* by adding an important dimension (unrecognised by Siemens et al. 2015) of 'understanding the university as a public good' (Peters and Jandrić 2018b: 1271).

While it could be argued that understanding the university as a public good is an important prerequisite for knowledge socialism, Peters' vision requires the much deeper epistemic, economic and organisational transformations associated with Kleiner's sociomaterialist understanding of knowledge and knowledge infrastructures as a commons. However, our analyses indicate that this one prerequisite has not been achieved. The majority of examined educational institutions did well at the technological front, yet only a few of them could be loosely understood as public; and even those 'public' institutions are very far from a commons. Using Kleiner's argument against copyleft, it becomes clear that even the most creative universities that function as digital public universities are far from knowledge socialism. Consequently, the search for educational knowledge socialism must go even further into low theory and vernacular practice.

Capitalism and its enemies coexist in a dynamic struggle of appropriations and re-appropriations of ideas, concepts and technologies. Following the recent success of platform capitalism, therefore, it was only a matter of time before someone tried to appropriate platform technology for non-capitalist purposes. In 2018, a group of academics from Oxford University started the Woolf University,[8] 'a platform startup that aims to leverage distributed ledger technology to remove higher education intermediaries, support decentralised governance structures and ensure the security of data.' (Vander Ark 2018) The Woolf University crosses cutting-edge technology used in platforms such as Uber and Airbnb' with the blockchain technology developed as a transaction tool for the cryptocurrency bitcoin. In their White Paper, founders of the Woolf University offer a series of bombastic promises:

> Woolf will be a borderless, digital educational society which reimagines how teachers and students connect. It will rely on blockchains and smart contracts to guarantee relationships between students and educators. For students, it will be the Uber of degree courses; for teachers, it will be the Airbnb of course hosting, but for both parties the use of blockchain technology will provide the contractual stability needed to complete a full course of study.
>
> It is our view that the model set out in this white paper will disrupt the economics of higher education and provide new opportunities for both students and academics.
>
> Blockchains with smart contracts can automate administrative processes and reduce overhead costs. Students can study with lower tuition and academics can be paid higher salaries.
>
> It is our ambition that Woolf be a revolution without precedent in the history of the university. But at its core, Woolf makes possible the oldest and most venerable form of human education: direct personal, individual apprenticeships in thinking. (Broggi et al. 2018: 1)

According to Tony Bates (2018), the Woolf University exhibits 'highly idealistic goals for democratic governance—by the faculty—and its main attraction is offering alternative and regular employment for the very large number of poorly paid but highly qualified adjunct professors who cannot get tenure at regular universities.' Set-up as a non-profit organisation, the Woolf University also promises cutting the cost of high-quality higher education based on one-to-one tutorials. The Woolf University's 'ideal' education is a mix of Greek scholastic tradition, high technology, and dedication to improving the conditions of teachers and students. This mix of open

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[8]See https://woolf.university/. Accessed 12 February 2020.

technology and leftist ethos results in substantial differences between the Woolf University and 'regular' online learning, e-learning or massive open online courses. In our recent paper, Sarah Hayes and I (Hayes and Jandrić 2020) have compared the Woolf University to Ivan Illich's (1971) educational networks and found some important differences. The Woolf University provides a seemingly robust technical infrastructure for egalitarian forms of teaching and learning, yet does not implicitly subscribe to a deeper ideology. Illich's theory, on the contrary, moves far beyond technical infrastructure and envisions a future post-capitalist society (Jandrić and Hayes 2020).

In his analyses of the Woolf University, Ralston (2019) similarly cautions that '[i]njecting blockchain technology into higher education processes (degree management, learning outcomes evaluation, admissions, registration, etc.) can also generate waves of innovation theatre' in which applications of newest technologies become self-referential and self-sufficient goals in themselves. Situating the Woolf University in the postdigital context, Ralston (2019) further shows that '[w]ithout certain basic non-digital preconditions in place (quality instructors, just working conditions, healthy learning environments, etc.), innovative distributed ledger technology (DLT) can have an inconsequential effect on the primary mission of colleges and universities: namely to educate students.' Based on this analysis, Ralston (2019) concludes that 'a postdigital approach to blockchain entertains the bonafide possibility that the educational technology space will one day transcend blocks and chains, perhaps even embracing non-digital technological alternatives.'

The Woolf University's ideology is still somewhat elusive, and it is unclear how it will deliver its promises. But while it is still too early to see any practical results, we fully agree with Bates' conclusion that the Woolf University 'is definitely a development to be carefully tracked.' (Bates 2018) To an extent, however, these conclusions also echo important differences between Stallman's copyleft and Kleiner's copyfarleft; too much focus on technology and the lack of explicit theoretical underpinnings, combined with viable political economy, can make any advances by the Woolf University ripe for another round of capitalist appropriation. In the past few years, 'venture capitalists [have been] pouring funding into new technologies for a trillion-dollar industry in the US that could be ripe for disruption: education.' (Duling 2014; Shulman 2019) At the same time, vernacular projects such as the Woolf University have tried to disrupt education for anti-capitalist purposes. There is nothing new under the sun—education has always been a theoretical and practical battlefield of worldviews and ideologies, and our attempts at teasing out opportunities for knowledge socialism collected in this book are just one small addition to this eternal historical struggle. Yet, this short analysis of knowledge socialism in educational practice clearly indicates that, at present, technological affordances for knowledge socialism are much more advanced than its theory and political economy.

Conclusion

Early studies of digital cultures and early Internet activists have been firmly focused on immaterial aspects of information and knowledge. However, examples from the capitalist appropriation of Stallman's Free Software Movement, through the small-scale success of the Platform Cooperativism Consortium's communitarian platforms, to latest educational developments such as the Woolf University, send a clear message. Bits and bytes can easily be manipulated in socialist ways, yet hardware socialism—and ultimately further developments towards knowledge socialism—urgently requires new political economies and theoretical groundings. Analysing this important shift in focus from early digital studies to today, Andreas Wittel outlines the three main direction for this expansion:

> The first expansion is a *thematic* expansion *from media to technologies*. Digital technologies are not just media technologies but technologies that are at the heart of all industrial sectors. (…) The second expansion is a *theoretical expansion*. More specifically, this is an expansion of Marxian concepts. (…) The third expansion is that of a *scholarly ethos*, from mere critique to *activism*. [The political economy of digital technologies] is not just interested in a critique of digital capitalism, but it is also concerned with a search for alternatives to neo-liberal capitalism and with ways out of the current crisis. (Wittel 2017: 251)

In relation to knowledge socialism, the thematic expansion from media to technologies implies the development of a sociomaterialist understanding of knowledge socialism based on a symmetry between material and non-material aspects of the postdigital reality. Theories such as Fuchs' digital capitalism (2019), Srnicek's platform capitalism (2016), and Zuboff's surveillance capitalism (2016) need to be built into Peters' theory of knowledge capitalism (2004, 2019) and counterbalanced by new theoretical developments in the realm of knowledge socialism. Accepting the rupture-and-continuation nature of our postdigital reality (Jandrić et al. 2018: 895), this act of counterbalancing should avoid dualistic and/or oppositional approaches. Extremes such as *homo economicus* versus *homo collaborans* and knowledge capitalism versus knowledge socialism are useful points of departure for theoretical work, but our postdigital reality is firmly situated in messy and unpredictable spaces between those extremes.

Unsurprisingly, knowledge socialism is deeply rooted in Marx's dialectical materialism (Peters 2004). While there is a growing body of research that reconceptualises Marx's theories in and for our postdigital reality (e.g. Fuchs 2019), low theory developed in underground activist circles receives much less dedicated attention. Marxism's transition from low theory to high theory took many decades; today, low theories such as Stallman's concept of freedom of information can transform into high theories over the course of few years. Our postdigital age blurs distinctions between centres and margins, high theory and low theory—indeed, in many cases, these traditional distinctions have increasingly become meaningless (Jandrić and Hayes 2019). Knowledge socialism needs to develop its own philosophy, and this task requires an erasure of borders between low and high theory.

Reasons for expansion of a scholarly ethos from mere critique to activism are countless, so I will just list those I find most important. Firstly, as the old adage says, there is nothing more practical than a good theory; without clear theoretical underpinnings, knowledge socialist practices are ripe for capitalist appropriation. Secondly, and perhaps even more importantly, the postdigital age is inherently messy and unpredictable. When applied to practice, even the best theories, such as Stallman's theory of freedom of information, can take unexpected turns and yield unwanted results. Third, the practice of knowledge socialism is always situated within the wider society. Learning from earlier traditions of emancipatory struggles over knowledge such as the Frankfurt School of Social Sciences, therefore, knowledge socialism needs to be defined as a philosophy of praxis.

Capitalism, for all its misconceptions and faults, has an admirable ability to appropriate leftist concepts and ideas for own purposes. Once upon a time, The International became the anthem of worldwide communist movement; internationalisation's late twentieth century equivalent, globalisation, has become a key component of our current stage of capitalism. In turn, the left uses the same 'trick': Stallman appropriated the traditional concept of copyright and turned it into the libertarian concept of copyleft, only to become appropriated again by software and platform corporations that have turned open access into a means for advancing their profits. The struggle between knowledge capitalism and knowledge socialism is a never-ending story of appropriations and re-appropriations, and those of us who advocate knowledge socialism must remain constantly alert and ready to fight new battles.

Judging from other contributions to this edited volume,[9] the contemporary struggle for knowledge socialism is in grave danger of repeating important errors made by earlier generations such as a strong orientation to the immaterial aspects of digital cultures, a dualistic approach to our postdigital reality, a disconnect between high and low theory, and a disconnect between theory and practice. It is by historicising the quest for knowledge socialism into struggles past and present that we can hope to avoid at least some of these past mistakes and create a better bargaining position within the never-ending cycle of appropriations and re-appropriations of concepts and practices between eternal forces of individualism and collectivism which characterise our human nature.

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[9]As one of the editors for this volume, I had an 'unfair' advantage of reading the majority of contributions before I wrote my own chapter.

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Petar Jandrić is Professor at the Zagreb University of Applied Sciences, Croatia and Visiting Professor at University of Wolverhampton, UK. His previous academic affiliations include Croatian Academic and Research Network, National e-Science Centre at the University of Edinburgh, Glasgow School of Art, and Cass School of Education at the University of East London. Petar's background is in physics, education and information science, and his research interests are situated at the post-disciplinary intersections between technologies, pedagogies and the society, and research methodologies of his choice are inter-, trans-, and anti-disciplinarity. He is Editor-in-Chief of *Postdigital Science and Education* journal and book series. Personal website: http://pet arjandric.com/.

Chapter 6
A Communist Theory of Writing: Virno, Lyotard, and a Rewriting of the General Intellect

Derek R. Ford

Introduction

What is a communist theory of writing? What does it mean to write like a communist? A first response to these questions might hinge on the orientation of the writing's content. Communist writing is writing about and for communism. Communist writing subjects capitalism to critical analysis, examining its differing histories and various contradictions to formulate revolutionary theories of communist praxis. This chapter takes a different route of response. Rather than focus on content, I propose that communist writing is a particular kind *rewriting*, a patient rewriting that occurs along a general line between intellect and stupidity, speech and silence, and knowledge and thought. My response emerges from several rewritings of the general intellect. I begin with a speech by Lyotard (1988/1991), which distinguishes between rewriting as remembering and rewriting as working through and introduces the role of digital technologies in rewriting. I then turn to Paolo Virno's (2003/2015, 2004) rewriting of the general intellect, which expands the concept beyond determinate capabilities and knowledges. Yet I show that this rewriting at the same time compresses the general intellect into a fundamental and linguistic truth that lacks an antagonism to capital. In the remainder of the chapter, I rewrite the general intellect again, returning it to its indeterminacy by positing a general and postdigital (squiggly) line between intellect and its other.

D. R. Ford (✉)
DePauw University, Greencastle, IN 46135, USA
e-mail: derekford@depauw.edu

Rewriting for Knowledge or Thought

In a talk delivered at the University of Wisconsin, Milwaukee and Madison, Lyotard (1988/1991) addresses the topic of 'rewriting modernity'. Although the formulation was given to Lyotard by the conference organizers, he says it is a better way of phrasing the 'postmodern' genre because of two shifts it enacts: it changes the 'post' into a 're', and then applies the 're' to 'writing' rather than 'modern'. The 're' is more appealing than the 'post' because it clearly eschews any attempts at periodization. The modern is not something that is *before* the postmodern; there is no temporal break between the two. Further, the distinction between a 'before' and 'after' eclipses the 'now', ultimately relegating it to the after (as in, 'we are in the era after modernity') and disallowing the pursuit of excess and surplus, or that which cannot be represented. This is because 'the postmodern is always implied in the modern because of the fact that modernity, modern temporality, comprises in itself an impulsion to exceed itself into a state other than itself' (25). There is always excess and a surplus—an untamable thing—at work in modernity. The postmodern is an interruption in the modern, a way of *re*approaching the modern by rewriting it.

One way to approach rewriting is to take something that is more or less finished (like a final draft) and then go back to the beginning to write it again. This approach mirrors the postmodern division, locating definite origins and ends, and revising the period in between in an effort to clarify and shore up any excesses, which in writing appear as errors like stray marks, misspelled words, incorrect phrasings, and so on. In this approach, rewriting modernity is revisiting the period to settle accounts and expose errors, to show the way things really were, to get at the fundamental truth. Such a rewriting is merely a remembering of modernity: a *writing again.* When one remembers, one identifies a chronology of events: at this moment I felt/saw/heard/thought/knew this, and then that happened, and so on. Rewriting as remembering tries to gain more precision each time, getting closer and closer to—and finally mastering—an origin or cause ('no, you do not remember correctly, it was at *this* moment that *this* happened, not at *that* moment!' '*That* thing had nothing to do with it!'). Rewriting here is refinement through isolating the object of memory from everything else.

Rather than rewriting as remembering, Lyotard posits rewriting as working through, a process without predeterminations, prejudices, judgments, will, or end. Whereas rewriting as remembering forces conclusions and causality, rewriting as working through opens the subject up beyond reason and logic: 'the only guiding thread at one's disposal consists in sentiment or, better, in listening to a sentiment. A fragment of a sentence, a scrap of information, a word, come along. They are immediately linked with another "unit".' (Lyotard 1988/1991: 31) Working through has no guarantees to finality and no assurances to predetermined ends. It requires patience and listening. Descriptions and connections do not flag revelation, knowledge, or certainty, but ambiguity, opacity, and possibility. Remembering aims for an increasingly determinate decipherment of truth, while working through circles the truth as it disavows access to any fundamental or final truth. The former, in other

words, aims for understanding and knowledge while the latter aims for thought. The postmodern is therefore not something that comes after the modern, but a rewriting of the modern, a rewriting that is and has always been part of or internal to modernity.

Interestingly, Lyotard concludes his rather brief talk with a quick set of remarks on digital technologies and their impact on culture and cultural commodities. Digital technologies rewrite the world, but he sees them in this talk as promoting only the first approach to rewriting. He here links this rewriting to the definition it assumes in journalism, 'an already ancient craft, which consists in erasing all traces left in a text by unexpected and "fantasy" associations.' (34) Computers, he says here, promote this kind of rewriting 'since they submit to exact calculation every inscription on whatever support: visual and sound images, speech, musical lines, and finally writing itself.' (34) [1] Indeed, as I write this on a computer, squiggly lines of different colors appear under 'incorrect' or 'problematic' words, phrases, and other markings. I want to make the lines go away, which means I right click on them to find out what problem my word processor has with them. I make a split decision about it and accept or reject it. I might add a word to the processor's dictionary to prevent future squiggly lines. This is a serious problem for Lyotard: 'what is really disturbing is… the importance assumed by the concept of the *bit*, the unit of information. When we're dealing with bits, there's no longer any question of free forms given here and now to sensibility and the imagination.' (34) I am writing into a program, which is programming my writing. I can modify the program (by adding words and rules), but these modifications themselves are only possible because the program accounts for them. Moreover, any modifications are *responses* to the program. The word processor flags something and I respond. Even if I preempt the program, I am still responding to it; I am just doing so before its prompt. This is a properly postdigital configuration: the digital technologies have altered my being in such a way that I cannot properly untangle them.

Working through requires patience because it is a state of openness to the unforeseen where one listens for what one does not know, for what is other. Computers programmed in this way simply are not suited for working through. Rewriting, Lyotard concludes, means resisting the rewriting of my word processor. Yet this is only one way to conceptualize computer technologies. As I show at the end of the chapter, we can *rewrite* these technologies to accommodate, or even facilitate, rewriting as working through.

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[1] This is just one place of many where Lyotard writes on technology, and it is not representative of his general take on it. Elsewhere, for example, he writes of the thoroughly postmodern opportunities for rewriting as working through opened up by technologies. For one example, see Lyotard (1996/2009: 40).

Rewriting the General Intellect

The word processor, the computer on which its running, and the network from which it continually updates itself bring us directly to the general intellect, a concept that organizes a section of the sixth and seventh notebooks of Marx's *Grundrisse* (1939/1993). Collectively and posthumously known as the 'fragment on machines,' in these 10 or so pages Marx theorizes some of the contradictory aspects of changes in the organic composition of capital (specifically the relationship between living labor and machinery). The basic thrust of these pages is that, as capitalism develops, it congeals the means of labor into one large automated machine system that, 'set in motion by automation, a moving power that moves itself; this automation consisting of numerous mechanical and intellectual organs, so that the workers themselves are cast merely as conscious linkages.' (692) Rather than workers deploying skill and knowledge to transform raw materials with tools, under this new configuration agency is shifted to the system as a whole, such that the workers are only relay points in the production process, which is progressively dominated by machinery. Workers do not run the machines anymore, they conform to the machines, responding to their squiggly lines.[2]

The development of capitalism is the progressive subsumption of 'the general productive forces of the social brain' (Marx 1939/1993: 694) to the extent that they appear as capacities of machines (and capital) rather than workers. Yet machines themselves are the products of labor, which continually works to develop machinery. My computer, word processor, and network are all the products of past and continual labor. Machines are, Marx says here, 'the power of knowledge, objectified.' (706) The more the productivity of machinery grows, the greater 'degree general social knowledge has become a *direct force of production*', and, consequently, the more 'the conditions of the process of social life itself have come under the control of the general intellect and been transformed in accordance with it.' (706) As the organic composition of capital shifts toward fixed capital, production depends less on actual labor time and more on the general social brain.

Herein lies the central contradiction: capital is the production of value, which depends on labor power, but as capital develops its productive capacity, it requires less labor power. Thus, we have 'the material conditions to blow this foundation sky high.' (Marx 1939/1993: 706) Rising productivity could reduce necessary labor time and increase time for 'artistic, scientific, etc. development of the individuals in the time set free, and with the means created, for all of them.' (706) The general intellect's command over production enhances the material conditions for communism, but conditions are not guarantees for outcomes. This is why, just a few pages later, Marx reminds us that as machinery develops it 'forces the worker to work longer

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[2]Some Marxists might accuse me of lazily slipping here between production and non-production, but I am, after all, working this machine as a condition of my employment (and while the university I work for does not properly produce profit, the publisher I am producing for definitely does).

than the savage does, or than he himself did with the simplest, crudest tools.' (708–9) Now that I can type rather than write, send and proof articles online, and so on, my productivity requirements increase. Nonetheless, these few pages remain rich resources for communist theory, particularly with recent transformations in the capitalist mode of production, most notably the shift from Fordism to post-Fordism.

The overlapping crises of global capitalism, as they manifested in the most industrialized countries in the 1960s and 1970s, stemmed both from the internal logical operations of capital accumulation and the inspiring national liberation, socialist, and progressive struggles of working and oppressed peoples across the globe. Out of the different ways capital reconfigured itself in response to these crises are two related developments that depended on the general intellect. One of these was the spatial reorganization of production in absolute and relative terms. Absolutely, moving production out of the industrial core broke up the power of industrial unions (and the social movements connected to them), driving down wages and increasing structural unemployment. Relatively, production broke up into smaller and more flexible units. This spatial response was possible (and necessary) because of the development of the general intellect, which was now objectified in 'increasingly sophisticated supply chain software' (Srnicek 2017: 17). The other reconfiguration widened the net of capitalist exploitation beyond the factory and into the whole of society. Not only were formerly public or collective goods and services privatized and subsumed under the logic of capital, but capital increasingly looked to exploit the realm of social reproduction. In both of these developments, capital responded to the struggle of labor: in the first case by attack and the second by absorption.

The way in which capital incorporated the demands of radical struggles is, according to Paolo Virno, a 'masterpiece', as capitalism mobilized the 'exit from the factories, indifference to steady employment, familiarity with learning and communication networks' for its own ends (Virno 2004: 99). Post-Fordism, therefore, takes on precarity, difference, and the desire for cooperation. The working life is not a continuous life but one constantly interrupted and redirected; instead of one or a few stable and long-term jobs, one has multiple (often overlapping) temporary and flexible jobs, requiring endless interviews (communicative acts), the orientation to new and shifting rules and norms, and so on. As it incorporates these elements, post-Fordism represents the communism of capital.

Before continuing on with Virno's important developments on the general intellect, it is important that we note the link between the general intellect, networked technologies, and living labor. Giorgio Griziotti (2019) demonstrates broadly how digital technologies facilitated the communism of post-Fordist capital, or how capital accumulation was able to accommodate and incorporate the demands of the multitudes in the social struggles of the 1960s and 1970s. The key here lies in the differences between developments in industrial machinery and digital hardware and software. For one, there is little time between invention and implementation in the latter, whereas the former required years and even decades before they reworked factories, the economy, the social, and subjectivity. Relatedly, the cost of integrating digital technologies is generally less than industrial technologies. Thirdly, digital technologies are generally open such that new developments do not render previous ones

irrelevant. Important here is 'interrupt', the ability of the operating system to be interrupted but still function, which allows it to 'manage multiple interactive levels with the outside world', which makes software 'social' in that it is 'constantly relating to the outside world' (39). Fourth, and as we noted with Srnicek above, real-time computing makes automation, delocalization, and fragmentation possible and easier.

There is, as such, a simultaneous and differential process of delocalization and concentration, and balancing this is key to post-Fordism's ability to thrive on the extraction and enclosure of the general intellect. On the one hand, capital encourages common production and peer-to-peer networks because these unleash the creativity of the general intellect. On the other hand, however, capital encloses these through vertical integration by inserting itself as relay points, as we see, for example, in platforms like Uber and AirBnB. Capital also simply takes products of the general intellect that were produced through free and open software by innumerable nodes in an ever-expansive network. He notes that Linux and Unix BSD, which are under 'non-restrictive licenses, are still the key elements of our technological-cognitive era' (Griziotti 2019: 30). Capital, however, encloses these by developing incompatible and proprietary derivatives from them: 'Yesterday it was IBM and H&P, today the champion of closed and proprietary systems is called Apple, with its iPhone/iPad Operating System (iOS) and Mac OSX, both derived from Unix BSD.' (30)

The general intellect produces the material basis of outsourcing and new fertile ground for capital extraction, enclosure, and accumulation. Virno claims that post-Fordism is the empirical verification of Marx's theoretical formulation about the general intellect in the 'fragment'. At the same time, he rewrites the general intellect in different ways that entail both remembering and working through the history of capitalism. Virno places particular emphasis on the *general* of the general intellect, as distinct from any *particular* intellect. The concept, he writes, 'should not necessarily mean the aggregate of the knowledge acquired by the species, but the *faculty* of thinking; potential as such, not its countless particular realizations.' (66) Virno links the general intellect with living labor, rather than with fixed capital, as Marx (apparently) did in the *Grundrisse*. The general intellect is *public* and based on the cooperation of workers, even though capitalists privately appropriate it. While this distinction between fixed capital and living labor has significant implications for any theory of surplus value (as it upsets the definition of value as socially necessary labor time), more pertinent to my purposes here is the extension of the general intellect to potentiality via the linguistic faculty.

The general intellect most clearly attaches itself to living labor under post-Fordist production through the paradigmatic role of language and communication. Under Fordism, silence was the rule. Communication was a distraction, or worse, something that signaled the potential for forging solidarity and radical consciousness. The worker was receptive to the demands of the boss. Under post-Fordism, the opposite is the case. If the slogan in the Fordist factory was '"Silence, men at work!"… Today, in certain workshops, one could well put up signs mirroring those of the past, but declaring: "Men at work here. Talk!"' (91) The communication industry is hegemonic in the sense that it provides the means of production for the totality of capitalism;

except it produces linguistic forms and practices instead of machines. Still, the relationship runs even deeper, for post-Fordism is not merely the exploitation of actual historical languages, but the linguistic faculty in general.

To get at this, we should turn to another one of Virno's (2003/2015) works, *When the Word Becomes Flesh*, a book that is more concerned with linguistic than political theorists. The possession and utilization of language reveals the pure potentiality and absence of specialization that characterize human being—making humanity political—and that post-Fordism both relies on and puts to work. 'Life and language', Virno remarks, 'share the same indeterminacy because, being deprived of any extrinsic purpose, they both obey arbitrary rules.' (2003/2015: 29) Language is *praxis* because it makes its own rules and its product coincides with its execution. Of course, language can result in products that are external, but even when this is the case, the products are still goals internal to language. In this manner, we can appreciate how it provides the archetype for post-Fordist production.

When the communication industry—the work of producing knowledges, data, language games, affects, and so on—attains hegemonic status in post-Fordism (transforming industrial and agricultural production in its own image), the worker becomes a virtuoso in two related ways. Both the worker and virtuoso produce something without an end product. When the singer or pianist perform, the performance itself is the production. Because of this, the performance or the immaterial labor requires an audience or the presence of others; they are necessarily public. Physical commodities—end products—are obviously produced in post-Fordism, but the value of these commodities is determined largely by the immaterial labor that goes into their production (and distribution and sale). Education is a proper example here. There is undoubtedly an end product to the educational process—a transcript, degree, certificate—but this is less important than the ideas, experiences, affects, and so on that occur through and are inseparable from the educational experience itself. Moreover, even the value of the end product is itself determined by other kinds of immaterial labor, primarily involving public relations and perceptions.

Speaking the General Intellect

As a speaker, the worker's virtuosity differs from that of the performance artist in that the latter relies on a well-defined script, while the former does not: 'the language taken up by the speaker's virtuoso performance constitutes a simple potentiality, without preordained measures nor autonomous parts.' (Virno 2003/2015: 32) The speaker, to be sure, relies on all manner of conventions, rules, and so forth, when they utilize historical languages to convey content. Thus, to understand the pure potentiality of the speaker and the role of the general intellect in post-Fordist production, we have to turn from the historical or particular to the general:

> In every enunciation there are two fundamental, symbiotic but distinctive aspects: a) *what we say*, the semantic content expressed by the enunciation thanks to certain phonetic, lexical

and syntactic characters; b) *the fact of speaking*, the decision to break the silence, the act of enunciating as such, the speaker's exposure to the eyes of others. (43)

It is this second aspect of the enunciation that contains the pure potential of speech, of which the first is an actualization. Moreover, there are times when what matters is not the content of our speech but the very act of speaking, when we communicate our ability to communicate. While the enunciation's content is generally prioritized in an almost or totally exclusive manner, there are moments when the background of language comes to the fore. When I am riding in my building's elevator with a neighbor and we have a brief chat about the status of the weather, the content is almost totally irrelevant. Instead, we are simply displaying and exchanging our ability to communicate, presenting and recognizing each other as speaking beings. There is one instance, however, when the content and fact of speech, when language in particular and the linguistic faculty in general, coincide perfectly: '*I speak*.'

'I speak' is a performative utterance of an exceptional class. Performative utterances are those that accomplish something: 'I promise you that…' 'I forgive you for…' or 'I now pronounce you husband and husband.' With performative utterances, the content figures more prominently than the fact of speaking; the speech act produces something external, and the content need not correspond to reality (I can *say* a promise without actually *making* it). With 'I speak' the situation is totally different. The content of the enunciation *is* the act of the enunciation; the particular actualization and the general potential occur simultaneously. The utterance does nothing more or less than its content, and thus perfectly corresponds with reality and needs only the body and air to occur. 'I speak' references and signals only itself. For these reasons, it is the *absolute performative* and, in this role, provides the form for all speech acts that signal the act of speech rather than content. Finally, as it foregrounds the generic capacity for speech, it serves as a crystallization of the general intellect.

It is true that we rarely say: 'I speak.' Nonetheless, we enact the absolute performative in a host of other expressions and times:

> Staging the fact of speech is appropriate—and actually desirable—every time our lived experience is forced to retrace the essential steps of our becoming human. That is, every time that a danger, a doubt, a possible confusion can be dispelled only be reenacting, within the specific forms of human life, the travails of *anthropogenesis*. (60)

When the child begins to speak, they initiate the absolute performative through different expressions of repetition, fabulation, and announcement. Whereas development psychology focuses on the content of these repetitions—which they call 'egocentric', Virno argues that their enactments as the absolute performative are what really matter. The content might refer to the *particular* kind of being they are becoming, but the fact of speaking refers to their inauguration into the *general* intellect *as* a particular individuation.

This inauguration and individuation are never complete. Human being is not guaranteed once and for all. Vygotsky postulated that the child's echolalia was preparation for the 'internal voice' of the adult mind. But there are definitely times when

we externally vocalize the absolute performative. When I walk into an empty class-room before teaching, I might say to myself, 'here we go' or simply, 'let's see…' Writing this book chapter, I perform several different utterances, like 'hmmmm', 'does this make sense?' or 'what about…' As absolute performatives, each one of these asserts that I am here, I am I, and I am a speaker. The most intriguing state-ments of this sort are those with ellipses at the end. The actual thought need not be articulated out loud. What matters is the initial anthropogenesis, the initial state-ment of, 'Alright, what about…' When writing, this comes out of my mouth at those moments of transition or interregnum, when I am between two things, but I am not sure what the between is or what lies on the other side. This is common for the absolute performative, which tends to occur in limit situations. Even the neighborly elevator exchange occurs at the limits between two strangers. Uncertain what norms we share, we turn to phatic communication, communicating communicability. Each act of anthropogenesis emerges from a primordial transindividual common.[3]

The absolute performative only remains marginal during periods of stability. When a certain way of living and relating is in crisis, when the rules and frameworks through which we understand society and ourselves no longer function smoothly or lose legit-imacy, the absolute performative takes central stage. Periods of stability push poten-tiality into the background and actualizations into the foreground, thereby covering over or repressing the indeterminacy and lack of specialization that characterizes human being. Post-Fordism, however, is a new period that is stable in the temporal sense, but unstable in its character. As an unstable stability, under post-Fordism the absolute performative is 'the hallmark of today's communication society' (90). Post-Fordism is upfront about this, and the forms of life within it 'don't hide the disorientation and the instability of the human animal but, on the very contrary, they push them to their extreme and systematically valorize them. Our amorphous poten-tiality… pervades every aspect of the most banal *routine*. ' (204) Never before have the demands and contours of the capitalist economy shifted with such frequency and rapidity. At my liberal arts college in the USA, we sell students and parents on the liberal arts as something that teaches a variety of skills with general and wide applicability. Students know they will likely work multiple jobs before they are even 30 years old, and that they will be a rare case if they end their working life in the same industry or field as they began.

In essence, then, what the post-Fordist mode of capitalist production puts to work is the generic indeterminacy and potentiality of life itself, as 'the labor process mobilizes the most universal aspects of the species: perception, language, memory, affects' (227). It is worth recalling that the very category of 'labor power' captures, or attempts to capture, these universal aspects in their potentiality. In the first volume of *Capital*, when Marx introduces the category of labor power, he writes that it is a capacity that encompasses 'the aggregate of those mental and physical capabilities

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[3]For more on Virno's conception of transindividuality and the relation between the singular and the common, see Read (2015).

existing in a human being, which he exercises whenever he produces a use-value of any description' (1867/1967: 164). Virno rewrites this definition in an expansive way so that labor power does not only refer to *the aggregate* of capabilities, but the *potential* for capabilities. Under post-Fordism, labor power 'encompasses within itself, and rightfully so, the "life of the mind"' (2004: 81). Training for work is not the development of specific competencies that would then scale up into an aggregate—in which particular manifestations of intellect scale up into the general intellect—but the development of pure potentiality—in which particular manifestations of intellect derive from the infinite wellspring of the general intellect.

To put it differently, training involves exposure to flexibility, uncertainty, and change. Thus, from the perspective of capital, when the worker's job is replaced through automation, the worker immediately re-enters the training grounds as they look for work and try to make ends meet on a daily basis. From the perspective of proletarian struggle, this time can also be spent training in revolutionary organizing, critique, and so on. But the point is in either case that the workplace and the school are no longer privileged sites for preparation for the working life, but rather the preparation is endless and takes place across the entirety of the social field (and here, again, we can see why this has important implications for value). Society as an evolving totality produces the general intellect, which in turn serves as an unmarked script for the virtuoso proletariat. Capitalism proper is therefore increasingly exterior to the production process, which it no longer has to systematically organize like it did under Fordism. This exteriority, for Virno, is a primary reason that the post-Fordist revolutionary subject—the multitude—does not have to overthrow capitalism, but defect from it.

A General Line for the General Intellect

The ambivalence of post-Fordism makes the absolute imperative a central aspect of language and production. The fixed careers that characterized Fordism made visible the articulated content of speech, while the precariousness of post-Fordism makes the fact of speech visible. The absolute performative is the pinnacle of the appearance of ontology, 'when nature knows its own full *revelation*' (2003/2015: 17). Because the absolute imperative is the key linguistic element of post-Fordism, the revelation is not occasional but constant: 'the root has risen to the surface… That which has always been true, is only now unveiled' (2004: 98). Post-Fordism allows us to fully grasp the potentiality of life and the general intellect. Virno's rewriting of the general intellect is expansive as it opens up the concept beyond determinate capabilities, knowledge, aptitudes, skills, dispositions, and so on. Yet even as Virno works through the general intellect by expanding it into pure potentiality, at the same time he remembers the general intellect by compressing it into a fundamental truth of the human. By positioning indeterminacy as the state of the human species, he makes indeterminacy determinate.

Virno's rewriting of the general intellect, in sum, is both a remembering and a working through. The latter aspect concerns his push beyond the aggregate of fixed capacities into the realm of pure potentiality, while the former aspect concerns the empirical verification of the general intellect, the discovery and articulation of the inner core of capitalism and humanity. This is a pressing political and philosophical issue. If the linguistic faculty is indeed innate for the human species, then that would mean that those without that faculty are not part of the human species, or that those who do not or cannot demonstrate that faculty are deficient in some way.[4] Even as Virno's theory of individuation insists on a fundamental commonness or a transindividuality that precedes and exceeds the individual, he still prescribes the linguistic faculty as its nature. In the remainder of this chapter, I want to rewrite the general intellect again, not in an effort to further *describe* it, but to return again to its indeterminacy by asking about the other of the general intellect.

In other words, what I am after is not a more precise or even more open or expansive definition of the general intellect, but an approach to the general intellect that accommodates that which is other to the intellect: the stupid, the mute, the invisible, the silent. How can we rewrite the general intellect so that it does not subsume or erase that which escapes it? Is there, to formulate it succinctly, a general line to the general intellect? To explore these questions is not to universally or ahistorically valorize indeterminacy in the same way that Spivak (1988) demonstrates how Foucault and Deleuze, in their celebration of postrepresentationalism or antirepresentationalism, erase the history of imperialism and the capitalist division of labor and universalize an Other (which is always the European-Othered). Stupidity, muteness, and opacity are not in themselves communist. Articulation and knowledge are of course central to the communist project, and yet that project, and others similar to it in academia (the context within which the piece is written and published), is almost entirely focused on inexhaustibly detailing and documenting every crime of oppression and exploitation. They are solely concerned, in other words, with the first kind of rewriting Lyotard presents: clarity and certainty. The task is to keep these dual goals concurrent.

In one of his short fables published toward the end of his life, Lyotard (1993/1997) seizes on fragments of Nina Berberova's *The Revolt*. Berberova's narrator in the book reflects on two different aspects or spaces of life. There is the public life, the life that one lives in the open, the visible life. On the other hand, there is the secret life, the invisible life, which Berberova's narrator calls a 'no-man's-land'. The two are not distinguished based on morality or responsibility. It is not that one is accountable in one and unaccountable in the other. There are different forms of accountability and interaction, however. In the secret life, one does not properly 'answer' another. This does not mean, as Lyotard insists, 'that you are irresponsible. It follows only that it happens by means of answers and questions. It is not argued.' (117) Secrets, by

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[4]This is not a hypothetical concern, but a totally empirical one, and one that disabled activists and critical disability theorists continue to fight and struggle to address.

definition, are inarticulable. They literally cannot be said. If a secret is enunciated, it is no longer a secret.

As a consequence, the secret escapes—lies outside of—both historical languages *and* the linguistic faculty, both *parole* and *langue*, and the *ability* to speak. The secret life is not about what one knows but what one does not or cannot know. Even so, it does not serve as a reserve for new knowledge. 'You grant your hours of solitude to that existence because you have a need *not* to know more. That's how it is that you can encounter what you are unaware of. However, you wait for it.' (116–117) (emphasis added). As the (non)place where one goes to rewrite, it requires an enduring patience and openness to unexpected, unforeseen, and unforeseeable encounters. The general life is where one argues, reasons, articulates, and expresses; in a word, where one *knows*. The secret life is where one *thinks* without knowing or having to know, where one is receptive to the absolutely other. The secret life is an inhuman zone that constitutes as it interrupts humanity. Lyotard asks: 'How can we have any chance of finding how to say what we know not how to say if we do not listen at all to the silence of the other within?' (121–122)

The two lives run continuously; there is no temporal disjunction between them. They are not mutually exclusive, antagonistic, or even necessarily dialectically related. When one's in the secret life, the public life is still there, outside, suspended, off at recess. The antagonism, the difficulty, the terror comes when the general line is chipped away at, erased partially or totally by the general life. The antagonism keeps itself low key, and surfaces gradually, cautiously, and discreetly. We do not even recognize the attack until it is well underway. When rewriting is reduced to remembering, that is one instance when the general line is obliterated: write to express the truth! write to complete the story! write to articulate (and reduce) the excess! The duty is to maintain the general line between rewriting as remembering and rewriting as working through.

We have to keep our watch over the general line so as to accommodate the secret life, to protect it and its permanent stupidity while not eschewing knowledge and certainty. While Marx posited that the general intellect was embodied in fixed capital—which is necessarily private—Virno argues that the general intellect is embodied in living labor—which is necessarily public. Post-Fordism realizes the generic nature of the general intellect, which appears most clearly in the communications industry. That industry, which supplies the means of production for other industries, is itself based on the absolute imperative. With all of this incessant babbling, post-Fordism attacks the secret life, and Virno welcomes the attack as he defines the general intellect as the (now revealed) truth of the human. At this point, we can formulate one concise distinction between capitalist and communist knowledge that falls along the general line. Capitalism cannot tolerate the secret life, and so it forces it into expression and commodifies it. As such, capitalism performs a rewriting of modernity that seeks to capture all excess to turn it into profitable sources of revenue and production. Communist writing, by contrast, is freed from the domination of exchange value and thus has no need to compel the secret life into expression.

Rewriting the Postdigital Speech of the General Intellect

One day I entered my class, walked up to the computer, and opened up a text-to-speech application. I proceeded to teach the class using this application. The question we grappled with that day revolved around the voice, and 'my' voice in particular: where is it? What is it? Is 'I speak' relayed through a text-to-speech application the invocation of the absolute performative? 'I speak', as the perfect coincidence of the semantic content of speech and the fact of speaking, depends on the human utilizing their 'innate' linguistic faculty to perform the speech act. When 'I speak' through the text-to-speech application, I am not utilizing the generic linguistic faculty. At the same time, however, the semantic content enacts an (apparent) *deviation* from the fact of speaking. On the one side, we have the articulated and graspable content, and on the other side, we have an opacity and uncertainty about speech, voice, the human, and the very ability (and desirability) to grasp. This rift is a manifestation of the general line between the public life and the secret life, one that helps us rewrite Lyotard's final remarks in his speech on rewriting. What is my text-to-speech act if not a kind of rewriting of myself? The computer's algorithms are precisely what return the 'I speak'—and with it, the general intellect—to a state of indetermination. For, as Virno would remind us, the algorithms do not belong to the computer, but to living labor and the general intellect. In this instance, however, the general intellect moves us to the *other* of intellect.

To conclude, I would like to posit a theory of communist writing by first turning to a model proposed by Lewis (2017, 2019) and his reading of Althusser's (2006) later works on aleatory materialism and the encounter, a Marxism that embraces contingency, unpredictability, and excess; in short, the secret life. Althusser draws on Epicurus' conception of the world's origins. Before the world, there was a mere void in which atoms fell parallel to each other, until there was a clinamen, an unpredictable swerve of the atom that, as Lewis says, 'ruptures the orderly parallel distribution of atoms. A series of encounters akin to a chain reaction occur because of this swerve effect, leading to the birth of the world.' (Lewis 2017: 312) The swerve was unpredictable and ultimately unintelligible; there was no reason, intention, or motivation behind it. In his afterword to David Backer's *Althusser for Educators*, Lewis (2019) identifies the aleatory swerve at work in Althusser's use of *italics*, which Lewis posits as 'the formal equivalent of the swerve, shifting a word ever so slightly so as to highlight it, bring out its meaning, curve the reader's eye toward a nuanced inflection.' (79)

Yet for the equivalence to work, it needs to be pushed a bit further. Althusser was ultimately the one who produced the italics, who chose what words to italicize. Of course, through italicizing the author *opens* the word up to new meanings. Nonetheless, there is still the absence of unpredictability and unintelligibility. Thus, to propose a model of communist writing that accommodates the secret life, we need to introduce these elements somehow, and I want to do so by returning to the word processor's algorithms. Malott (2019) reminds us in his helpful work on digital communist education, that digital technologies don't have any permanent and

unalterable political disposition; they are neither inherently liberating nor inherently oppressive. Because capitalism, the dominant mode of production, structures digital innovation, the question is how to *sublate* algorithms and all digital technologies into a communist mode of production. Germane to the word processor is the algorithm: the operating languages and codes programmed into software and hardware. Because the algorithm operates according to predetermined rules, it

> …does not facilitate a purely creative process but orients the operator in a particular direction relatively fixed by its coded language. Part of the challenge for sublating an algorithm is therefore to edit or rewrite the machines' internal logic or code. The algorithm can therefore be preserved but in an altered form with the aspects conductive to capitalism overcome. (6)

My current word processor generates squiggly lines that follow a logic that is graspable and alterable. This alterability makes the word processor not only capitalist, but democratic. To properly rewrite communist knowledge, we need to edit the word processor's algorithm such that it generates squiggly lines erratically and unpredictably. My body is then drawn to unexpected and unanticipated words, spaces, phrases, characters, paragraphs, and so on. I would be rewriting as I am writing, constantly and unendingly working through these squiggly lines, then, which would return us to the inhuman territory of thinking that cannot be measured, quantified, evaluated, and put into the circuits of capitalist exchangeability. Communist revolution, of course, is not achieved through writing, or at least not through writing alone: it attacks the fundamental causes of oppression and exploitation through organized, disciplined, and protracted struggle. As such, no theory of communist writing is sufficient. Yet through communist writing, we can labor to defend the general line of the general intellect, thereby increasing the liberatory potential of the general intellect.

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Derek R. Ford is Assistant Professor of education studies at DePauw University, who studies and teaches educational theory and history as they speak to social movements. He has written and edited nine books, including *Politics and Pedagogy in the 'Post-Truth' Era: Insurgent Philosophy and Praxis* (2019) and *Communist Study: Education for the Commons* (2016). He is an organizer with the Answer Coalition, chair of the education department at The Hampton Institute, and editor of LiberationSchool.org.

Part II
The Challenge of Political Economy

Chapter 7
Knowledge Socialism Purged of Marx: The Return of Organized Capitalism

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Steve Fuller

Marxism as a Casualty in the Fight Against Neoliberalism: The Path from Philip Mirowski's Friendly Fire

Mirowski (2019) has subtly eviscerated the many left-inspired critiques of neoliberalism for misconstruing the movement's true epistemological basis, which has effectively 'rendered socialism unthinkable'—at least as far as Mirowski can see. Of course, Mirowski continues to regret neoliberalism's apparent triumph just as much as the critics that he criticizes. Characteristically, much of his argument is conducted by 'persuasive definition', in which he couches in explicitly pejorative terms quite incisive accounts of how neoliberalism works, perhaps to convey a greater sense of conspiracy on the part of the 'neoliberal thought collective', as Mirowski likes to say, than is necessary. Indeed, one might recast his account in a way that makes the neoliberals appear closer to how they have envisaged themselves, namely, as consistent defenders of human freedom, taking the battle to the final frontier of unwarranted restriction of access: knowledge itself.

Drawing on the full range of twentieth century capitalist economists—from the Austrian school to the neo-classical and even Keynesian schools—Mirowski (2002) had earlier identified a tendency to treat the 'market' as an all-purpose information processor. The motivating intuition is something like the following. Say I produce a good—by whatever means, for whatever purpose. What exactly is its value? The market answers this question in terms of the price at which I am willing to part with it, which happens when I assume the role of seller and then attract a buyer. At the same time, such transactions contribute to a deeper discovery process, as their pattern

S. Fuller (✉)
Department of Sociology, University of Warwick, Coventry CV4 7AL, UK
e-mail: S.W.Fuller@warwick.ac.uk

reveals the true purpose of the good. After all, some goods are directly consumed, some contribute to other transactions and some are simply 'banked' or in some other way treated as an asset. Moreover, some goods have staying power in the market, whereas other goods are soon superseded.

The various capitalist schools differed over the market's reliability to perform these functions, left to its own devices. While the Austrians trusted the market's reliability, the Keynesians did not. Indeed, they justified the need for the state as the producer of certain 'public' goods based on the unlikelihood that the market would naturally produce them. And while the Keynesian account remains a popular justification for state control over health, education and utilities, it is nevertheless telling that it trades on a circular definition of 'public', which is simply whatever cannot be produced by the privately driven forces of the market. Strictly speaking, 'public' in the Keynesian lexicon is a residual term on the basis of which the state is then leveraged as a 'god of the gaps' to make up for 'market failure'. Thus, like the other capitalist schools of economics, Keynesianism treats the market as foundational to the 'business of life', as the English founder of neo-classical welfare economics, Alfred Marshall had already said in 1890. 'True socialists', as Marxists have always regarded themselves, are sensitive to this point, which helps to explain their increasing suspicion of the 'welfare' preoccupations of 'social democrats' as the twentieth century wore on.

The question of the market's default standing in economic life arguably reached its head in what came to be known as the 'socialist calculation debate'. This debate served to define neoliberalism's steadfast opposition to a conception of 'socialism' that always threatened to spill over into Marxism (Steele 1992). The original site for this debate was two politically opposed circles—one socialist and one liberal— both of which were somewhat outside the academic establishment in post-First World War Vienna. The socialist circle, associated with logical positivism, was led on socio-economic matters by Otto Neurath, while the liberal circle, associated with Austrian economics, was led by Ludwig Mises, though a more junior member, Friedrich Hayek ended up having a more enduring impact.

Neurath held that a comprehensive scientific grasp of society's central tendencies allowed the state to administer to people's needs more accurately and efficiently than could be generated by bottom-up market forces. Neurath called his position 'Neutral Marxism' to indicate that he accepted Marx's socio-economic analytic framework while distancing himself from Marxist revolutionary politics (Proctor 1991: Chap. 9). For his part, Mises updated the Austrian school of economics for the twentieth century by stressing science's inability to capture in any overarching fashion the spontaneously formed intersubjective agreements that constitute social relations generally—and which the market epitomizes. Mises and his circle— including Hayek—came into economics through law, and so were mindful of the role that privately undertaken contracts played in the modern era as a countervailing force to the classical idea of law imposed through legislation, either by a sacred or secular sovereign. Contracts (aka 'prices' in a strictly economic context) historically generated greater levels of freedom, and in turn productivity, to which legislators had sometimes responded with authoritarian measures, resulting in resistance if not

outright revolution. The Mises Circle did not want science to be the basis of a 'New Leviathan', which is what they feared was happening in the newly formed Soviet Russia (Hayek 1952).

As this brief sketch suggests, the two sides of the socialist calculation debate read the lessons of the modern era as presenting rather opposed routes to improving the human condition. Whereas Neurath saw science as coming to dominate individual decision-making, once people appreciated the improvements to their lives that resulted from such delegation to expertise, Mises saw the law's increasing liberalization as granting freedom in ever more aspects of life, resulting in people being more comfortable with taking risks. While Neurath believed that the state could pre-empt unnecessary error, Mises regarded the state as potentially pre-empting necessary liberty. Knowledge is implicated in both cases as enabling the state to be a vehicle of what I have called *modal power* (Fuller 2018a). This theme is of course familiar from the work of Foucault, albeit in his characteristically disengaged way. However, for our purposes, what the socialist calculation debate highlights is the original Platonic point that an emphasis on 'knowledge' leads to a concentration and asymmetry of modal power—that is, the state is allowed to restrict individual freedom—whereas a de-emphasis leads to a more symmetrical distribution of modal power. Plato regarded this state as resulting in chaos and doom, but I shall present it below more positively as 'liberal interventionism'.

When Mirowski rails against neoliberalism's appropriation of 'deconstructive' and 'postmodernist' epistemological tropes, he is referring to just that sort of levelling, which even without the benefit of these trendy French movements, Mises had already proposed was better than Neurath's top-down approach to organizing the economy. Here too Mirowski is wise to observe that Marxism's blindness to this move results from its more ontologically grounded, or 'realist', conception of 'truth', which sees knowledge as aligned not merely with specific power relations but with material conditions that pre-exist the intentions of the particular agents who constitute a field of power. Mirowski also correctly understands Marx's great stress on human labour as a factor of production in terms of this heightened metaphysical orientation, one shared by Aquinas and even Locke—but which Mises and the neoliberals, as true moderns, resolutely do not share. But as we shall see below, *contra* Mirowski, to acknowledge the metaphysical blinders on Marxism's understanding of capitalism is not to indict all forms of socialism. In fact, Marxism is the only form of socialism that has openly engaged in ideological warfare against capitalism, even though—in theory at least—it too regards socialism as somehow 'completing' the industrial revolution begun by capitalism.

My own point in all this is that we should reverse the polarity of Mirowski's value judgements by arguing that neoliberalism's epistemological horizon is in fact *more* 'realistic', but at a meta-level, in the sense of *Realpolitik*—namely, it is concerned with, as Bismarck memorably defined politics, the 'art of the possible'. In that respect, the state has one clear superordinate role in neoliberalism, which is to increase the realm of possibility. The legal means for this, once again, is to break default entitlements, which came to be known in the early days of neoliberalism's intellectual cradle, the Mont Pèlerin Society, 'liberal interventionism' (Jackson 2009).

According to this doctrine, the state breaks up monopolies and other rent-seeking socio-economic entities that impede the flow of capital. In the case of intellectual property, this means 'knowledge capital', or more to the point, 'human capital'. 'Liberal interventionism' in this sense was the calling card of self-described 'progressive' political movements on both sides of the Atlantic in the early twentieth century, including the Fabian movement, which helped found the UK Labour Party (Fuller 2018b).

Although Theodore Roosevelt and the Webbs may seem unlikely comrades in arms, they shared a profound aversion to what was passing as *laissez-faire* capitalism, which amounted to the default accumulation of advantage over time without any concern for its long-term social value, given the impediments that would be increasingly imposed on newcomers (Fried 1998). At the very least, this would entail an enormous waste of talent, if one operated with an open-minded attitude towards the contributions of future generations. Here, one needs to recall the supposedly scientific basis for the *laissez-faire* doctrine in 'Social Darwinism'. The slogan 'survival of the fittest', a phrase adapted from Herbert Spencer (not Darwin), epitomized the spirit of the movement, which seemed to accept the inevitability of wasted talent given a world of scarce resources. But the more politically salient point was that Social Darwinism had elided the difference between biological and financial advantage by its acceptance of the Lamarckian doctrine of the 'inheritance of acquired traits', which was intuitively helped along by ambiguity in the colloquial usage of 'inheritance' and such associated words as 'dynasty'. Under the circumstances, the progressives feared that capitalism would turn into a high-tech and globalized form of feudalism—that is, unless the state intervened to disrupt what amounted to an unlimited license for monopoly formation.

Knowledge itself soon came into the sights of the progressives, insofar as restricted access to both education (via selective schools) and research (via intellectual property) structurally reproduced the spread of advantage across the population. Theodore Roosevelt came up with a novel solution to part of the problem, which would have the big corporate monopolies—Rockefeller, Carnegie, and Ford—channel much of their profits into 'foundations' dedicated to research and education for public benefit, in lieu of paying taxes. These predated publicly funded bodies in the USA by two generations and arguably made the biggest contribution to both natural and social scientific innovation in the twentieth century (Fuller 2018a: Chap. 4). The more general progressive solution was to foster mass education and minimize—if not outright eliminate—intellectual property rights (e.g. Nye 2011: Chap. 5). Of course, this was easier said than done. Indeed, over the years several thinkers associated with neoliberalism's ascendancy to power in the late twentieth century came to embrace monopoly formation, rendering 'liberal interventionism' in practice a policy for corporate tax relief and market deregulation, policies associated with the Reagan-Thatcher years (Davies 2014: Chap. 3). I shall return to this curious turn in neoliberalism's intellectual trajectory, when considering Saint-Simon's brand of 'socialism'.

Socialism Without Marx: Reoccupying the Saint-Simon-Proudhon Spectrum of 'Utopian Socialism'

Once socialism outgrows its nostalgia for Marx, it will regroup around a polarity defined by Saint-Simon and Proudhon—the corporatist and the libertarian, and thereby 'socialism' will be seen as simply the name for alternative capitalist futures. Indeed, given that both Saint-Simon and Proudhon completed their most important work before Marx, one can read what follows as an updated version of what socialism might have been, had Marx never existed. Basically, the versions of 'socialism' proposed by Saint-Simon and Proudhon were alternative strategies for harnessing capitalism's full productive potential for overall social benefit. As a first approximation, the one calls for greater concentration of capital and the other for greater dispersion of capital. Both have their appeal, and as I have suggested, neoliberalism has flipped from a more 'Proudhonian' to a more 'Saint-Simonian' orientation. However, unlike Marx, both Saint-Simon and Proudhon celebrated capitalism's entrepreneurship and risk-taking. The two simply differed over the kind of society in which this should happen: Should it be governed top-down vs bottom-up? Is entrepreneurship best done by *one on behalf of all* or by *all as a whole*?

These are profound metaphysical disagreements, to be sure. Moreover, the associated policy differences between Saint-Simon and Proudhon to some extent track the socialist calculation debate. Both were concerned with minimizing waste and maximizing productivity, realizing that various sorts of trade-offs had to be made between the two. In response to these, Saint-Simon generally favoured scaling up and Proudhon scaling down: *incorporation vs subsidiarization* (cf. Cahill 2017). Nevertheless, despite these profound differences, their attitude towards *labour* was much more ontologically flexible than Marx's—and in that respect, showed a greater appreciation for the implicit metaphysics of capitalism. Here it is worth recalling that by the time the labour theory of value had made its way from Aquinas to Marx, it had undergone a curious metamorphosis. The appeal of this medieval doctrine in the early modern era had rested on its clear opposition to the value regime supporting slavery and other forms of indentured servitude. Thus, for Locke and Adam Smith, the labour theory of value defined the proper reward of an individual's labour. To be sure, Marx went on to re-specify 'labour' as a collective factor of production. However, Marx retained a metaphysical residue from the original theory. Although Marx officially dissociated the value of labour from any theological conceptions of human exceptionalism, he still regarded it as qualitatively distinct from the value of nature and other forms of capital. Indeed, the Marxist critique of capitalism's 'exploitative' character depends on this point.

Nevertheless, as greater liberalization in the nineteenth century enabled people to deploy their labour in a wider arena and in various combinations with others, it became natural to see labour as itself another shapeshifting form of capital. David Ricardo pioneered this awareness by explicitly theorizing the terms—which he took to be inevitable—on which the drudgery of labour might be replaced by more efficient

technology. And whereas Marx denounced Ricardo for justifying—if not encouraging—unemployment as dictated by the 'logic of capital', Ricardo had himself anticipated later neoliberal boosters of the 'knowledge economy', whereby 'technologically unemployed' workers would adapt to changing market conditions by acquiring new skills (Fuller 2019b). Thus, for Ricardo, the real enemy of labour is not technological innovation but rent-seeking practices—including trade unions and professions—that restrict these renovated workers from entering new markets where they might be competitive with more established players. After all, if one thinks of labour as a shapeshifting form of capital—indeed, perhaps the most protean of all such forms—then the real problem is not that you might lose your job but that you might not afterwards find another job because the market is dominated by 'closed shops', the American expression for businesses that hire only union members.

Both Ricardo and Marx were notorious foes of rent as a source of capital. However, the above discussion suggests a difference in the diagnosis of rent's failures, which in turn reflects a difference in commitment to the labour theory of value. Marx was the stronger adherent to the theory, ultimately anchoring the value of labour in the work that people actually do, independently of how many other people could do the same job or its exchange value in the market. Rent is a problem from this standpoint primarily because it is unearned wealth: income is accrued from sheer ownership without the owner adding productively to what is owned. It amounts to a legally justified power grab that gives the owner free rein over how to dispose of others. Social justice-based arguments against 'worker exploitation' can be easily mounted on this basis. In contrast, Ricardo saw rent primarily in terms of what it means for other market players—namely, it restricts their access to resources that they might use more productively than the current owners themselves. Thus, the circulation of capital is impeded and the economy loses dynamic capacity to deliver prosperity for all. In short, the moral force of the critique of rent shifts from freedom arrogated (Marx) to freedom obstructed (Ricardo). In a liberal society, the latter is of greater normative concern. It is also closer to what I earlier identified as the 'progressive' position. Interestingly, some Marxist-inspired economic historians have begun to come around to the Ricardian position, albeit in their own tortured ways (e.g. Christophers 2019).

Before turning to Saint-Simon, it is worth observing that historically the normative case for allowing rentiers absolute control over access to their property rested on the fact that, *contra* Marx, rentiers do indeed contribute to the value of what they own by preventing its deterioration, so that its value is kept constant as it leased to others who typically also agree to keep it in a fit state. In his renewed defence of this case, Scruton (2012) rightly associates what we would now regard as an 'ecologically sustainable' orientation with the economic horizon of classical conservatism. Moreover, much the same argument is implied in today's discussions about the value of universities as 'custodians' of knowledge, notwithstanding the barriers that this entails in terms of various 'entry costs', whether it be in terms of acquiring credentials or simply understanding the content of academic texts. Here we need to imagine that the 'turnover' of both private land and technical language through repeated and extended use generates concerns about the maintenance of quality control, which in turn justify the existence of said 'custodians' (Fuller 2019a).

In contrast, Saint-Simon saw the advantage of monopolies from a much more dynamic perspective, one that nowadays would be most naturally cast in terms of 'economies of scale'. Moreover, unlike both the eco-conservative and the Social Darwinist perspectives, he clearly saw nature as an opponent that can be conquered. Indeed, Saint-Simon may be credited with having conceptualized the market economy in the sort of explicitly 'political' terms that could win over Carl Schmitt. He held that the step change in human evolution—from 'military' to 'commercial' societies—occurred once we shifted from exploiting each other in wasteful conflict to exploiting nature together productively. Here nature is pitted in decidedly anti-ecological terms as humanity's ultimate foe, the conquest of which is necessary for humanity to fulfil its species potential. Saint-Simon's hostile view of nature—which Marx inherited whole cloth—is a secular holdover of the Doctrine of Original Sin, whereby Adam's Fall amounts to our species' descent from divinity to animality. Perhaps unsurprisingly, Saint-Simon dubbed his philosophy, the 'New Christianity', which did not sound quite as strange in the early nineteenth century as it does today—though the advent of transhumanism may bring this theological dimension of Saint-Simonianism back in fashion (cf. Fuller and Lipinska 2014).

As far as Saint-Simon was concerned, Adam Smith half-understood what was needed to turn the market economy into an engine of human progress—if not human redemption. Smith realized that markets allowed people to freely pursue their talents in consort with their fellows without the artificial legal restrictions of birthrights and monopolies, which serve only to allow future action to be overdetermined by past settlements. Moreover, Smith was right to think that this liberalization would result in a self-organizing 'division of labour', whereby everyone plays to their strengths and is rewarded by others for doing just that. Such is the moral basis of the market economy, a side-effect of which is the increased prosperity of all. Thus, it is no accident that *The Wealth of Nations* was preceded by *The Theory of Moral Sentiments*. That is the right way around to understand the moral argument for capitalism, as opposed to how his 'free market' defenders interpret him, which would have the tail of increased wealth wag the dog of mutual respect. McCloskey (2006) is one free market economist who actually understands this point.

However, Saint-Simon observed that Smith's model does not automatically scale up. Historically, markets were centres of action that operated according to the needs of the communities housing them. They emerged 'spontaneously' as people traded their surpluses to satisfy their needs. However, markets were neither continuously operating nor coordinated across communities, which could prove problematic if the surpluses and/or needs exceeded local market capacities. This was the problem that Saint-Simon attempted to solve under the rubric of 'socialism'. Indeed, by 'socialism' Saint-Simon meant *corporate capitalism*. Instead of people spontaneously organizing themselves, they would be explicitly organized by a change agent—a 'catalyst', as chemists would say—into what came to be known as an 'organization', which is reasonably understood as an artificial organism. These catalysts are Saint-Simon's 'captains of industry', the entrepreneurs of social innovation that we nowadays call 'knowledge managers' (Fuller 2002: Chap. 3). Moreover, the science of chemistry itself is strongly implicated in these developments, well into the twentieth century.

Wilhelm Ostwald, who had discussed 'organizing' in the context of how scientists produce a chemical synthesis in the laboratory, also championed a second-order version of this process in terms of the conduct of science itself (Fuller 2016). His French contemporary Duhem (1991) disparagingly dubbed this 'German science', but it came to be normalized as large-scale, team-based laboratory work led by a 'principal investigator' who organizes the talent such that the team's scientific output is much greater than what any of them could have accomplished individually, aka 'Big Science' (Price 1963).

As for Saint-Simon's original vision, it had been already justified by the medieval jurists who invented the *universitas*, a very interesting Latin concept that is normally—and rightly—translated as 'corporation', of which 'universities' and 'incorporated communes', or 'cities', were among the original exemplars (Kantorowicz 1957). The *universitas* is truly an 'artificial person' in the sense that Hobbes later appropriated for the secular state and is nowadays associated with androids, *à la* 'artificial intelligence'. What unites these materially quite different cases is a statement of founding principles, a 'charter' or 'constitution', that—in the manner of computer algorithms today—serves to assemble initially distinct agents into 'parts' that constitute a 'whole' whose purposes transcend the particular ends of those who happen to be its members at any given time. (One is reminded of the frontispiece of the first edition of Hobbes' *Leviathan*.) Unlike, say, a mutual aid society, a military expedition or even a joint-stock company, the *universitas* is not a temporary arrangement. Rather, it enjoys a life of its own, perhaps even in perpetuity. From that standpoint, the current members of a *universitas* are disposable on the basis of their functionality. In sociological terms, these functions—the 'parts' that constitute the 'whole'—are called 'offices', or simply 'roles', each of which is associated with a procedure for selecting and replacing individuals in a line of succession, say, via examination or election.

Due to the work of another lawyer-economist, Ronald Coase, neoliberal economics retraces Saint-Simon's line of thought in its conception of the *firm*, a superordinate market agent that minimizes the transaction costs between first-order market agents by making them readily available to each other as incorporated parts of a single functioning unit (Coase 1988: Chap. 2; cf. Birch 2017: Chap. 6). In this way, potential 'negative externalities' from supply and demand failing to align from moment to moment in what had been a collection of independent agents are 'internalized' into what is now a unified system's normal operation. Thus, the concerns raised by Neurath in the socialist calculation debate about imperfect information flows and miscommunication in markets are met through the backdoor, rendering the firm in effect a protected free market. In that respect, modern imperialism—with what Marxists call its 'global division of labour'—can be understood as the logic of the firm projected on the world stage. Indeed, this had famously led Lenin to see imperialism as capitalism's ultimate self-expression. He meant this as an indictment, but Saint-Simon might have taken it as a compliment—especially if he did not read the fine print.

However, Lenin's was not the only understanding of capitalism's relationship to imperialism in the early twentieth century. The alternative, due to Joseph Schumpeter, gets to the difficulty of capitalism achieving the sort of 'corporate capitalism' to which Saint-Simon aspired. For Schumpeter (1955), imperialism is simply the reinvention of feudalism in capitalist garb, as it tends to stabilize a 'global division of labour' on land-based terms ('colonies'), which in turn become sources of rent and—as in historic feudalism—potential targets of military conquest. In the process, Saint-Simon's much-vaunted evolutionary transition from military to commercial society gets undone. The problem here is not that a global division of labour per se exists but that its imperialist version tends to arrest the economy's dynamism, creating artificial monopolies, over which wars can then be fought. After all, targets come more easily into view when their boundaries do not change. In a similar vein, Schumpeter regarded the Marxist fixation on classes as an organizing principle of capitalism as a holdover from feudal estates. Collective mobilization on the basis of class is likely to succeed only if the mode of production is subject to relatively little innovation, resulting in a static labour market. In short, the appeal of class consciousness is inversely related to the prospect of social mobility. This helps to explain the pattern of Marxist revolutions in the twentieth century, starting with Russia in 1917. They typically succeeded in societies that had yet to be fully industrialized—contrary to Marx's own prediction, of course.

The challenge facing a latter-day Saint-Simonian is how to avoid the Marxist trap of presuming such a rigid conception of capitalism's social relations as to ignore the inherent dynamism of capitalism's mode of production. The general Saint-Simonian response is to conceptualize class in radically functionalist terms. In order to meet demand in response to changing market conditions, firms must be able to regularly alter their internal division of labour: not only role-players but the roles themselves must change. This means that any grouping of workers is always expedient relative to a job for only as long as it needs to be done: teams must easily assemble, disassemble and reassemble. Saint-Simon, who popularized the use of 'industrious' to refer to a personal quality, understood the increased productivity of labour, like Ricardo, as being opposed to the cultivation of a line of work for its own sake, as in such residually medieval institutions as trade unions or professions. Indeed, knowledge management is arguably the only 'profession' allowed in Saint-Simon's world, in which universities would effectively become high-toned business schools. Even so, how can a firm retain its integrity if its development is likely to require so much external and internal change?

Before the existence of the firm, which was itself a social innovation of the Industrial Revolution, another version of the *universitas* faced a comparable problem on an arguably larger stage: the *state*. It is often forgotten that natural law theory, the discursive context in which the *universitas* was constructed in the Middle Ages, presupposed a cosmos governed as a 'divine corporation', which amounted to a theologized understanding of ecology (Schneewind 1984). On this view, nature is the outworking of divine intelligence in matter, such that life is tantamount to the expression of mind. (The intuitiveness with which we accept the idea of life as the product of a 'genetic code' may be a secular downstream effect of this sensibility.)

From that standpoint, Saint-Simon's innovation amounts to asserting that God has delegated to humans the right to operate in a similar fashion, but now within—rather than from outside—nature. In this way, the *imago dei* doctrine of the Bible morphed into political economy's principal–agent theory. An early adopter of this idea turns out to have been John Stuart Mill, who made a semi-serious case for the existence of a 'limited liability God' (Copp 2011).

But before any of that happened, Thomas Aquinas had already departed from Aristotle in envisaging the political order not as a spontaneous feature of human nature (i.e. *zoon politikon*) but as a second-order extension, what today we might call an 'extended phenotype' or 'superorganism' (Fuller 2016). To be sure, these latter-day conceptions reflect the influence of evolutionary thinking that was unavailable to Aquinas. Indeed, Aquinas thought of the 'state' in biblical terms as imposing an artificial constraint on humans who might otherwise regress to their fallen condition. Moreover, his fixation on this superordinate entity as a 'state' (*status*) suggests something capable of maintaining what biologists call 'homeostasis', which entails a standard of equilibrium between the organism and the environment, as well as a means to restore equilibrium when necessary (Kantorowicz 1957: Chaps. 5 and 6). This helps to explain, for example, the right of slaves to revolt against their masters if they are mistreated. Such mistreatment, while not providing grounds for eliminating the master–slave relationship altogether, does presuppose a 'state', which combines the sacred and secular features of natural law to redress such injustices, thereby restoring a 'natural' order in which masters and slaves deal with each other with the dignity accorded to their respective natures.

This vision of the divine corporation held sway well into the eighteenth century, the last great expression of which was probably Carolus Linnaeus' theory of 'natural economy', out of which came the two-named basis of for the classification of animals, plants and rocks that remains in modified use today (Koerner 1999). However, that same century witnessed the rise of an 'epigenetic' approach to life that gradually eroded the intuition that had grounded Aquinas' conception of the state—namely a static nature that is front-loaded towards the perpetuation of previously expressed traits, aka hereditary entitlements. This shift away from 'inheritance' in the broadest sense began in studies of cell development in the embryo, as scientists moved from thinking of the nascent life-form as 'preformed' to 'pluripotential'—which is to say, capable of various ultimate expressions, depending on the embryo's developmental context. This provided a metaphorical basis for people to claim that their 'potential' was being held back by adverse conditions that impeded their 'free development', which soon became a rallying cry for modern revolutionary politics. Two centuries later, Deleuze and Guattari (1977) would retrace this turn to the original disputes over epigenesis, in which they famously adapted Antoine Artaud's phrase 'body without organs' for the pluripotential embryo—what is nowadays usually called a 'stem cell'.

And roughly halfway between the rise of epigenesis and Deleuze's 'bodies without organs' stands Proudhon, who regarded each individual as an inherently pluripotential entity open to a variety of social arrangements, all of which might be of potential benefit to humanity as a whole. French sociologist Colson (2019) takes this position to be the metaphysical foundation of the various movements that have styled themselves

'anarchist' over the past two hundred years. For our purposes, Proudhon's sense of 'socialism' as a kind of spontaneously organized capitalism interestingly contrasts with Saint-Simon's more hierarchical conception. Proudhon starts by suspecting the very concept of property as both masking the collective nature of any human achievement and stifling the inherent dynamism of the modern economy. Indeed, he regarded private property as a feudal residue in modern capitalism, whose risk-seeking tendencies he admired as the fount of innovation. It is thus easy to see why Proudhon instinctively opposed treating the range of entities normally covered under intellectual property law as 'property' in any strict sense that might accrue monopoly benefits to innovators (Guichardaz 2019). More specifically, he accepted Adam Smith's premise that people while not equals in their own talents are equals in their need for the talents of others. It follows that the designated 'innovator' is simply the person who configured many talents and consolidated them in an invention that still other people have then employed to transform society as a whole. The innovator's 'originality' lies *simply* in having catalysed this chain of configurations, most of which the innovator him- or herself probably did not anticipate.

For Proudhon, two countervailing points follow from the above, which should be read as the broad outlines of a 'natural history of innovation'. On the one hand, the sheer publicity of the innovation removes any sense of the innovator's proprietary ownership, since others may end up employing the invention in ways that make it more beneficial if not profitable than what the innovator could have done or even envisaged. We might think of this point as the technological antecedent of the late twentieth century 'death of the author' thesis promulgated by Barthes, Foucault, Derrida and 'post-structuralist' thinkers, who stressed the extent to which the meaning and significance of a text always escapes and exceeds its author's intentions. On the other hand, it is certainly true that each innovator provides 'added value' as the catalyst that consolidates an invention. In that respect, innovators deserve some compensation for their work. Proudhon proposed that the state should provide both authors and inventors a 'salary'. Proudhon's proposal was clearer in its conception than its implementation. Nevertheless, the guiding intuition was that anyone could be an innovator but the success of an innovation depends on everyone else. An innovation requiring major effort may generate little effect, whereas one involving trivial effort may turn out to be very profitable—in both cases, for reasons that are largely out of the innovator's control. A salary would thus strike a middle ground between no compensation and a permanent entitlement for the innovation.

Here it is worth recalling that the distinction between copyright and patent as forms of intellectual property had yet to be clearly drawn in the early nineteenth century. Indeed, at the 1858 International Congress on Literary and Artistic Property in Brussels, authors and inventors were treated as one with regard to the central question of whether their rights should be specifically understood as *property* rights (Machlup 1950). An influential figure in this context and on Proudhon was the lawyer Charles Renouard, who recognized that 'property' entails much greater legal protection than 'right'. A right is simply a permission to access, whereas property implies restriction of access as well. Renouard concluded that authors and inventors require

a temporary property right over their innovations *not* in order to reward them properly for their 'genius'. On the contrary, precisely because others could and perhaps would have arrived at the same innovation, they would probably also be in a position to appropriate all of its benefits once the innovation is made public, which would render Proudhon's notorious slogan, 'Property is theft!' a reality. Thus, for a limited period, any would-be usurper would require permission from the actual innovator (Haynes 2010: 87–89). While many legal and philosophical justifications have been given over the years for extending or retracting intellectual property rights, this has remained the grounding intuition for assigning them in the first place. It presumes a predilection for 'right' over 'property' as the relevant legal category governing innovation, a situation that all sides accept is subject to profound contingency.

Knowledge Socialism as Philosophy of Science: Revisiting the Popperians

Although in many respects Saint-Simon and Proudhon presented opposing—perhaps even diametrically opposed—visions of socialism as 'organized capitalism', nevertheless they both wanted to maintain the dynamic character of the capitalist system, which is associated with entrepreneurship's innovative brand of risk-taking. Here they were joined as one against the Marxists, who tended to regard that signature feature of capitalism as the harbinger of its ultimate self-destruction. The corresponding spirit in the philosophy of science to this anti-Marxist 'knowledge socialism' is the hostility to 'induction' as a form of inference in the broadest sense, whereby the future is presumed to be overdetermined by the past. To be sure, induction is inherent to our default understanding of reality, in the sense that we recognize change over time only relative to invariance. However, as Karl Popper famously insisted, the progressive nature of scientific inquiry depends on our suspending that intuition by systematically disturbing the background condition of invariance that which 'we' take for granted. And by 'we', Popper included the scientific community, especially in its institutional understanding that was made popular in the 1960s by Thomas Kuhn. In this context, the experimental method functions as the critical foil, as epitomized in the 'null hypothesis', whereby the default expectation is pitted against a rival newcomer who proposes an alternative future—at least in terms of specific predictions—on the basis of a common past.

The source of Popper's instinctive opposition to inductive reasoning lay in his original training in Gestalt psychology under Karl Bühler, Freud's great Viennese rival in the 1920s. It played a subtle but significant role that continued to influence the philosophy of science for the rest of the twentieth century. Key to this influence was the famed 'Gestalt switch', an experimental effect whereby an ambiguous figure can be interpreted in two radically different ways, depending on how the experimenter contextualizes the figure for the subject. What Popper called a 'crucial experiment' potentially functioned in this capacity if the newcomer hypothesis proves to be

correct, thereby forcing scientists to reconsider whether their default understanding of the phenomenon in question had been flawed all along at some deeper level. To put it in Gestalt switch terms, if what you originally saw as a 'rabbit' suddenly appears to be a 'duck' because the background conditions of the ambiguous figure have changed, then was the figure a 'duck' all along? For Popper's great opponent Kuhn, this characterized a paradigm in 'crisis' mode, the prelude to a 'scientific revolution', arguably the ultimate Gestalt switch (Fuller 2015: Chap. 4).

A striking feature of the Gestalt switch, which emboldened Popper but disturbed Kuhn, is the epistemic efficiency with which a radical change in understanding is brought about. After all, generally speaking, a scientific revolution—just like the shift from the 'rabbit' to the 'duck' interpretation—does *not* involve replacing all the old data with new data. On the contrary, it involves reorganizing the old data in light of some strategically generated new data (e.g. from a crucial experiment) so as to give the totality of data an entirely new look. And this 'new look' may extend retrospectively to reinterpreting what past scientists had 'really' been talking about. On this basis, Popper's most sophisticated follower, Imre Lakatos, associated the very idea that our past knowledge automatically carries over into the future—the presumption of induction—with a failure to explore rival hypotheses. From him, a Kuhnian paradigm, whereby the dominance of one theoretical horizon restricts the range of scientifically viable alternatives, operates more like a closed shop than an open market. In response, Lakatos advanced a 'rationally reconstructed' understanding of the history of the science, which explored how science could have developed more efficiently even within its historical constraints. Some Lakatosians went on to promote Bayesian inference, which depicts scientific progress as occurring through successive rounds of competing hypotheses responding to common evidentiary challenges.

The epistemological motivation here is similar to what animated the 'progressive' reformers of the early twentieth century discussed earlier in this paper. Both take the sheer fact of *primacy*—that a piece of land is owned by descendants of its first owners, that an invention was patented or a discovery made by a particular individual or, indeed, that a field of science follows a paradigm based on some foundational achievement—to be 'contingent' in the strong sense that, under slightly different conditions, the originating party could well have been different and the course of events would have taken a different path, opening up different opportunities and developments. Cognitive psychologists nowadays encapsulate this entire range of phenomena—when it occurs in the mind of a single person—as 'confirmation bias' (Fuller 2015: Chap. 1).

It would seem to follow, as a matter of 'progressive' science policy, that one should project that sense of contingency into the future, what Popper (1957) himself called 'reversibility'. His model was regular democratic elections, whereby voters are provided the opportunity to change the party of government regardless of whether things are going well or poorly. This is the exact opposite of the implied policy of his rival Kuhn, who held that the epistemic strength of a science is that the paradigm dominating a field's research agenda is given an exclusive right to fail on its own terms—that is, it must persistently fail to solve problems it had set for itself, before the sort of fundamental alternative research trajectories that might result in a 'scientific

revolution' are licensed. As the economists today would say, Kuhnian paradigms enjoy a license to run 'path dependency' into the ground. 150 years ago, Renouard and Proudhon would have simply accused Kuhn of encouraging the scientific community to treat literally its domain of inquiry as 'intellectual property'.

Underlying the liberal and even proactive attitude to scientists fundamentally changing their minds that one finds in Popper and his students is a belief that our relationship to reality is sufficiently secure that it can tolerate a variety of ways of accessing and utilizing it, including ones that at a given time might be deemed 'unfair', 'unjustified', 'immoral' or even 'untrue'. Such was the hidden lesson of Galileo's 'success' as told by Popper's most radical follower, Paul Feyerabend. According to Feyerabend (1975), Galileo fabricated his most famous experiments and was unable to explain the optics behind his own makeshift telescope. In that respect, the Papal Inquisition was right to prosecute Galileo—and nowadays, needless to say, he would be pronounced guilty of 'research fraud'. Yet, of course, the subsequent history of science proved Galileo to have been largely correct, even though his beliefs were not justified at the time he presented them. On this basis, Feyerabend notoriously proposed 'methodological anarchism' as a principle of science policy, contrary to the position held by most philosophers of science, including arguably Popper himself. In short, for Feyerabend there is no royal road to the truth. Sometimes a vivid imagination and persuasive rhetoric can do the work of rigorous methodology, especially—as in Galileo's case—it inspires others to make up the probative difference.

Feyerabend's position has proved perplexing for philosophers because it involves a head-on collision between the ethics and the epistemology of knowledge production. After all, a cynical lesson that might be taken from Feyerabend's Galileo tale is that deception, perhaps even self-deception, may be a surer route to the truth than proceeding in a more 'truthful' manner. This goes against the general tendency since the end of the Second World War to tie truth-seeking to moral scruples. This turn to 'research ethics' began in the wake of the 1946 Nuremberg Trial, when scientists adopted the convention of not citing the results of Nazi research on human subjects, due to the unethical character of its conduct. This mentality was extended over subsequent decades, such that nowadays publication in scientific journals may be prohibited or retracted—and authors may be ostracized from the scientific community—under a variety of morally relevant conditions. These include failure to declare background financial and political interests supporting one's research, failure to secure proper consent from subjects, failure to acknowledge properly the sources of one's insights and failure to represent properly the means by which one's findings were obtained.

These potential breaches of research ethics reflect two countervailing features of the contemporary research environment. The first is a preoccupation with setting limits on the access to knowledge claims. Researchers must not overstate their achievements. The need to declare interests and secure consent function as a 'handicap' in a research environment that is presumed to be intensely competitive and where certain players, due to their initial financial and/or political advantage, might otherwise be granted too much authority. Put cynically, the researcher is procedurally inhibited from taking arguably the most direct path to a desired outcome—say,

by acquiring all the money and all the power needed to impose it on the research community. The second feature, which cuts against the first, is that the knowledge claims proposed by researchers are ultimately judged in terms of their face validity: is the experiment or field work described in a way that leads one to believe that it took place, and are the outcomes plausible, both in themselves and the conclusions drawn from them? Read against the backdrop of the increasingly formulaic presentation of scientific research, such criteria invite both plagiarism and outright fabrication. The only real question here is whether there really has been an increase in research fraud or simply more of it has been caught because the stakes—often financial—motivate peer reviewers to dig more deeply into the details of the research than they would have in the past.

Given these countervailing features of the contemporary research environment, one might reasonably conclude that the drive to place 'ethics' at the heart of research practice is bound to fail. However, I do not wish to decide the matter here. Instead I would simply remind readers that the philosophy of science has long included a tradition of thought that is studiously indifferent to the truth of fundamental theories and even the truthfulness of the people proposing them: *instrumentalism.* For the instrumentalist, a theory's scientific significance is simply the span of control that it allows over a target range of phenomena. The more one controls, the more one knows: knowledge is power. To be sure, the instrumentalist understands 'knowledge' in terms of *savoir* ('knowing how') rather than *connaissance* ('knowing that'). Nevertheless, for our purposes, what matters is that the scientist need not believe the theories she proposes and theories themselves need not be true; indeed, she need not even care. At most, so says the instrumentalist, the scientist needs to act 'as if' her theories were true. Perhaps the moral attitude most closely aligned with instrumentalism is hypocrisy.

Not surprisingly perhaps, instrumentalism has been always been regarded with some suspicion. Consider the two leading philosopher–scientists promoting instrumentalism in the early twentieth century: Ernst Mach and Pierre Duhem. The former would arguably reduce science to technology and the latter would subordinate it to theology. In both cases, science would be pursued as a means to some 'higher' end, not as an end in itself. Put bluntly, 'the end justifies the means', in which the conduct of science itself constitutes the 'means'. Duhem favoured instrumentalism because it prevented science from overtaking theology in terms of setting humanity's metaphysical horizon, whereas Mach favoured the same doctrine because it prevented science from ossifying into a secular theology that would then be imposed as society's metaphysical horizon. (The latter explains Lenin's demonization of 'Machists', since Lenin wanted to impose Marxism in just such a fashion.) Philosophers of science have tended to ignore these countervailing reasons for embracing instrumentalism because they characteristically fixate on the similarity in content of what Mach and Duhem endorsed at the expense of their radically different political motivations. Mach was a liberal parliamentarian and Duhem a Catholic restorationist.

Interestingly, Popper and his followers—including Lakatos and Feyerabend—have also been accused of scientific instrumentalism, yet they have vehemently denied it—and with considerable justification. Yet, the suspicion lingers. The reason,

I suggest, is that the Popperians treat 'science' in the same spirit as both Saint-Simon and Proudhon treated 'socialism', namely as the material culmination of humanity's spiritual journey. The charge of 'instrumentalism' functions as the charge of 'capitalism' that Marxists made against these so-called 'utopian socialists'. In both cases, the charge boils down to presuming that the material world is much more fluid, pliable and biddable than it really is. But *contra* the naysayers, one can take or leave fundamental theories or social structures under the right conditions and with minimal effort in the name of 'progress'. Revolutions are ultimately about rearranging the parts of already existing wholes to meet new challenges. They are Gestalt switches. The idea that the future will significantly repeat the past—the intuitive basis for induction—presumes that memory is saved rather than lost over time. But this is false to human psychology. In fact, memory needs to be actively maintained so as not to be lost. This explains the significance of both education and propaganda as institutions dedicated to the reinforcement of collective memory, as well as the profound and often subtle role that generational change has played in the reconstitution of collective memory. Once again the economists got the measure of the situation by reducing the intuitiveness of induction to a 'sunk cost', a 'that was then, this is now' attitude, which should not inhibit a change of course in the future (Steele 1996). In short, there is always everything to play for.

Pace Fredric Jameson and Slavoj Žižek, it is *only* Marxists who find it easier to imagine the end of the world than the end of capitalism. They cannot get their heads around the true nature of capitalism. For the past two decades, this has been the hidden message of Philip Mirowski's relentless critique of neoliberalism, which unwittingly has done more to undermine his fellow critics than neoliberalism itself. The increasingly baroque appeals to ontology—nowadays called 'critical realism'—that have characterized accounts of capitalism inspired by 'Western Marxism' for the past six decades have amounted to a reification of Marxists' own ignorance of capitalism's workings, which in the meanwhile neoliberalism has raised to epistemological self-consciousness. As Ricardo first realized, once human labour is seen as profoundly 'fungible'—namely that it might be done more efficiently by new technology—then attempts to protect jobs and secure wages started to look like rent-seeking. The logical conclusion, which goes to the 'spirit of capitalism', is that the 'human' is whatever manages to recover and enhance its value by shifting its shape in a dynamic market. In this respect, the human is not opposed to capital; it is capital in its most protean form, a proposition that transhumanists nowadays promote as 'morphological freedom' (Fuller 2019c: Chap. 2). In effect, neoliberalism has managed to perform a Gestalt switch on Marxism.

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Steve Fuller is Auguste Comte Professor of Social Epistemology in the Department of Sociology at the University of Warwick, UK. Originally trained in history, philosophy and sociology of science at Columbia, Cambridge and Pittsburgh, Fuller is best known for his foundational work in the field of 'social epistemology', which is the name of a quarterly journal that he founded in 1987 as well as the first of his twenty-five books. From 2011 to 2014, he published a trilogy relating to the idea of a 'post-' or 'trans-' human future, all with Palgrave Macmillan under the rubric of 'Humanity 2.0'. His most recent books are *Post-Truth: Knowledge as a Power Game* (Anthem 2018) and *Nietzschean Meditations: Untimely Thoughts at the Dawn of the Transhuman Era* (Schwabe 2019).

Chapter 8
The Democratic Socialisation of Knowledge: Integral to an Alternative to the Neoliberal Model of Development

David Neilson

Introduction: From the Tragedy of the Commons to the Critique of Neoliberal-Led Global Capitalism

Hardin's famous account of the 'tragedy of the commons', a tale of an agriculture-based village community which at its centre has a 'commons', has generated much debate and discussion around themes to do with economic ownership, control and regulation (Hardin 1968). The tale relates a specific scenario for considering a classic game theory problem of causes and solutions to conflicts between individual private interests and collective public outcomes. On the common land, village members can each graze their cow. However, no mechanism guards against scenarios where the resulting aggregate quantity of grass grazed by the sum total of the villagers' cows exceeds the commons' sustainable pasture reproduction. The problem is that individual villagers who engage in responsibly restrained grazing receive a reduced quantity of milk, while irresponsible grazers receive an increased quantity of milk. In sum, the commons' form of 'regulation', i.e. rules governing economic and social activity including forms of ownership and control, leads to conflict between private micro-interests and public macro-outcomes.

The generic neoclassical view is that systemic conflict arises between individual and collective interests because of the absence of private ownership that implicitly is equated with public ownership. Under a private property scenario that divides the commons into separately owned lots, each owner has a direct interest in simultaneously ensuring both responsible land use and maximum output. Thus, the pursuit of individual private interests aggregates as an optimal collective public outcome.

D. Neilson (✉)
University of Waikato, Hamilton, New Zealand
e-mail: david.neilson@waikato.ac.nz

A Marxist critique of the standard neoclassical reading of the commons tragedy is that it is an historical account parading as a universal/trans-historical argument that misunderstands the specificity of property relations that distinguish feudalist, capitalist, and socialist property relations.

First, the neoclassical reading resonates with a celebratory account of the transition from feudalism to capitalism rather than being a comparison of capitalist and socialist forms of ownership. Clearly, the feudal structure is not an example of democratic socialist regulation that involves the community collectively agreeing to a set of rules for managing and controlling the commons that deliberately aims to construct complementarity between individual contribution and optimal collective viability. Rather, the tragedy of the commons tale is an example of problems that can arise in the absence of a formal structure of regulation that loosely resonates with the feudal experience. In short, the neoclassical reading confuses the absence of privatised regulation with a socialist mode of regulation.

Second, the neoclassical reading does not address the contradictions of the historically specific form of capitalist regulation that, in the context of market competition, essentially comprise the structurally dependent but contradictory relations between private capitalist owners driven by private profit imperatives and non-owning waged workers who must sell their labour power in order to live. The mainstream perspective is conceptually unequipped therefore to consider how the macro-imperatives of competitiveness and profitability that govern the micro-decisions of capitalist firms do not automatically deliver stable or optimal macroeconomic outcomes. For example, individual capitalist private owners in an environment of coercive price competition to both sell their outputs in the market place and maximise their profits have an interest in low wages for their workers. That is, for individual capitalists, lower wages, *ceteris paribus*, imply both higher profits and greater room to set competitive prices. However, a general reduction in wages across all capitalist firms reduces aggregate demand for their products.

In a French Regulation School inspired reading, this inherent micro- and macro-tension can be addressed by constructing 'counteractive' forms of macro-regulation that deliberately constrain micro-decisions regarding wage increases within a range that is consistent with macro-stability of demand for capitalist products (Neilson 2012, 2020). That is, counteractive state-led macro-intervention that results in wages rising consistently with increasing productivity—the historical experience of countries in the post WWII Fordist era-stabilises aggregate demand for capitalist products (Lipietz 1988; Aglietta 1998).

Basing the tragedy of the commons tale in a contrast of socialist tension and capitalist complementarity between collective and individual goals is thus a misrepresentation. The commons tale needs to be placed in the specific context of broader capitalist imperatives that generate perverse incentives for micro-actors that lead to sub-optimal collective outcomes; and how achieving complementarity implies at the least the need for capitalism's (democratic socialist) regulation. Rather than different modes for regulating the local material commons, in dispute here is the mode of regulating the immaterial global network of digital information and communication, otherwise known as the Internet. As with the village commons, the dispute is about

determining the regulatory mode for the virtual commons that will ensure optimal complementarity between private individual and collective public interests.

Insofar as the present state of Internet regulation is at an early, unconsolidated and incoherent stage of development, it is similar to feudal regulation but is also different. That is, it grows haphazardly and rapidly, articulating different ownership and exchange modes for regulating information patterning as a complex patchwork. In addition, Internet developments are occurring within the ideologically contested environment of the prevailing neoliberal model of development that is pushing for privatisation of ownership. The discourse about the Internet is maturing beyond an initial enchantment that equated its technological power with a superior neutral knowledge, towards a more critical 'postdigital' disposition that questions its ideological neutrality (Peters and Besley 2019).

Ideological struggle centres on disputes about what constitutes appropriate forms of ownership and regulation for achieving complementarity between the production and exchange of information/knowledge, on the one hand, and optimal macro-outcomes, on the other. The struggle is centrally about the virtual commons; but it also brings in related debates regarding the forms of ownership and regulation of the actors and institutions that operate on the Internet's terrain and in the material world as well. On one side are neoliberal forces that are aggressively promoting the private ownership of the production and exchange of information. On the other side are progressive social forces fighting for socialised mechanisms for regulating intellectual production and exchange. Many issues arise that relate to the 'tragic' effects arising both from the capitalist form of regulation, and in parallel, from the absence of democratic socialist regulation.

Specifically, this chapter considers the present struggle over how to regulate the ownership and exchange of academic outputs (see Jandrić and Hayes 2019; Peters and Jandrić 2018a, b) as a component or stage of a bigger struggle over the form of the 'model of development' (Neilson 2020). That is, the present forces pushing back against private regulation and towards a socialised 'intellectual commons' are treated as the nucleus of a bigger project to transform the world beyond 'information capitalism' and into 'knowledge socialism'. This bigger project ultimately aspires to the goal of a comprehensive and 'true social and intellectual inclusion', a full 'sociality of knowledge by providing mechanisms for a truly free exchange of ideas' (Peters 2020: 7). Building on this concept, the chapter considers movement towards socialised regulation of the Internet and the socialised ownership of knowledge and information generally as key components of a mid-range democratic socialist alternative to the currently prevailing but failing 'neoliberal model of development'.

From the vantage point of 'knowledge socialism', the goal is to protect and reward the creative autonomy and integrity of individual knowledge producers while simultaneously encouraging the production and sharing of all knowledge. The project of knowledge's democratic socialisation thus directly challenges the neoliberal-driven privatised regulation of the production and sale of informational commodities.

Struggling Against the Commodification of Knowledge: Beyond the Academy

The neoliberal project to commodify almost everything everywhere dominates the contemporary struggle over the regulatory forms of knowledge ownership and exchange. Commodification, the outcome of capitalism's private property and monetized competitive market exchange relations, refers to the transformation of useful products of labour ('use values') into 'exchange values' or universally equivalent items for sale in the competitive marketplace, or what Marx (1976) calls 'real abstraction'.

The neoliberal regulatory framework of commodification transmission moves from key global regulatory agencies that have pushed countries to adopt forms of external regulation that open them up to global market competition, which in turn has rationalised the push for pro-market and pro-capitalist regulation of companies and the labour market within each nation state. This commodification process encompasses integrally connected material and immaterial dimensions. Commodification of the *material* conditions, process, and results of production has been extended to include publicly owned utilities, enterprises, and geographical spaces, as well as bringing in remaining collective commons such as water, fish, and plants. Commodification of the *immaterial* world, i.e. of knowledge, information, and discourse generally, has also been extended. Commodified knowledge owned by capitalist firms, i.e. 'intellectual property', underpins the design, innovation, and development of technologies and products for sale in the marketplace: from artificial intelligences (AIs) and robots, cars and computers, films and music, to plants and medicines, as well as the technical mode of information/knowledge communication itself.

At the present technologically advanced stage of capitalist development, the struggle between capitalist firms to remain competitive centrally involves innovation. In turn, privately owned 'intellectual property' drives innovation. Commodification steadily advances in the academy, a key site of knowledge production, as agents of the neoliberal project seek to subordinate the universities to capitalist goals and forms of regulation. Like regular capitalist firms, profitability goals now drive the *modus operandi* of the neoliberalising academy towards the commodification of learning, teaching, and research. Customer satisfaction and rates of market consumption have become universal measures of teaching performance. Precise measurement systems tagged to a monetized competitive distribution system compare, evaluate, and reward research outputs. This 'real abstraction' of knowledge extends to the global logic of market exchange and distribution. Universities and individual programmes compete globally for market shares. Publishing companies regulate and manage market evaluated academic journals that privately appropriate and distribute knowledge outputs via the Internet. Struggling against this neoliberalisation of the 'intellectual commons' has involved fighting for 'open source' alternatives to commodification (Peters and Jandrić 2018a, b).

As critique leads to the search for alternatives, progressive forces in the academy fighting commodification begin also to push more broadly for the socialised ownership, exchange, and distribution of knowledge outputs that Peters (2020) refers to as 'knowledge socialism'. Extending this fightback beyond the academy simultaneously prompts both critique of the broader effects of capitalism's technological and regulatory globalisation and the search for alternatives. In short, it leads us to consider the broader struggle against the immaterial (and material) dimensions and consequences of the neoliberal project.

As with the tragedy of the commons scenario, the neoliberal model of development is generating growing tensions between individual/private and collective/public goals. More fully, the neoliberal model of development has generated a world of competition—including between individuals, workforces, firms, Universities, and nation states—that is resulting in unstable and unsustainable macro/global outcomes. The universal commodification of knowledge and learning via the technologies and institutions of global capitalism is central to this growing tension; yet if re-purposed can contribute to the making of a more stable and sustainable democratic socialist future. Two specific themes focus this chapter's discussion: the global Internet understood as the potential site of a 'virtual global civil society', and a 'world knowledge bank'.

Beyond Facebook: Challenges for Constructing a Virtual Global Civil Society

For Aglietta (1998) democracy is the 'well-spring' of regulation; i.e. of coordinating rule-governed frameworks that seek stable and progressive collective social outcomes. Protagonists of market capitalist regulation, in contrast, support and seek to extend private ownership and private profitability. They view society simply as the spontaneous aggregate effect of private owners/individuals going about their own business. Neoliberal ideology thus disputes the need for macro-regulation in the above democratic sense and instead seeks a 'chain of signification' (Laclau and Mouffe 1985) between individual choice, market capitalist regulation, and democracy. Reimagining and practically establishing a new forward movement for democracy in the twenty-first century must first challenge neoliberal ideology and neoliberal regulatory institutions. Practically, such a project also needs to address continuing unevenness in the forms of democratic institutions at both national and global levels.

A core condition of a well-formed democracy that can drive progressive regulation is a well-formed civil society. Such a civil society has well-known liberal preconditions of 'free association' and 'free speech'. Marshall (1996) importantly brings in social democratic welfare state preconditions that include universal delivery of basic material needs especially free health and education services. That is, a well-formed civil society requires a well-informed citizenry, which in turn requires inclusively

universal material security with adequate free time for all, so that the whole citizenry can participate in the democratic process.

Integrally, the *form* of universal education is vitally important. It needs to be able to impart critical modes of thinking needed for informed analysis and independent evaluation of political discourses and social practices. In addition, it needs to instil socially inclusive democratic values. A well-formed civil society also presupposes public systems of information and communication that facilitate and protect factual authenticity and analytical robustness; as well as modes of communication that facilitate open access and open debate across different positions within the broader political debate. These conditions facilitate free, equal, open, and informed discussion amongst the citizenry, i.e. a well-formed civil society.

Free speech that implies individual rights to post information and freely express independent views needs to be consistent with other democratic goals, principles, and values that include genuine debate and meeting the needs of others. Genuine debate requires posts being both factually correct and analysis being consistent with the facts. Relatedly, it requires that citizens are aware of the different positions within any political problematic, and more generally have access to the different knowledge bases associated with different positions. In sum, a vibrant civil society requires producing, moderating, and filtering information, analysis, and values. However, as in the tragedy of the commons tale, there are tensions between private capitalist goals and the broader social public good, here, defined as a vibrant civil society.

These tensions are common to all eras of the modern capitalist world. Paraphrasing Marx and Engels (1977) in the *German Ideology*, those who own the means of intellectual production, deploy them to express views that while appearing to represent the general interest actually reflect their class interests. In the present environment of neoliberal globalisation, the power of the capitalist owners of the intellectual means of production to ensure that their class subject-position dominates ideological debate strongly validates the *German Ideology* thesis.

However, the lack of objectivity in the subject-position of capital does not simply validate either Lukacs' (1971) classic theory that the proletariat can become the first 'subject-object of history', or the implicit argument that it can thus be the objective moderator of truth. First, the theory wrongly assumes that capitalism will generate a circumstantially homogeneous proletariat comprising the 'immense majority', who therefore will share the same subject-position. Actually, capitalism has given rise to a heterogeneous social structure comprising diverse class groupings, intersecting with unevenly developing nation states, and gender and ethnicity divisions that have given rise to complexly overlapping yet diverse subject-positions on the objective world (see Neilson 2018a, b). Second, Lukacs' Leninism (1971), which in distinction from its actual empirical subjectivity equates the proletariat's class-consciousness with Marx's 'objective' critique of capitalism, decisively underestimates the many ways that theory can articulate with practice. The advent of digital capitalism and social media magnifies and extends the problems of objective moderation and democratic communication of different ideological positions.

The Internet comprises co-existing private and public ownership models, and private individuals as well as private and public organisations who can independently post information. Nonetheless, large privately owned firms that have outperformed competitors are increasingly dominating Internet applications. Especially in the field of social communication and interconnection, i.e. social media, Facebook has become globally dominant. Facebook is a capitalist company that implies its lack of objectivity. As well, Facebook's profitability imperative drives it to outperform rivals and relatedly extend its user base. However, beyond the imagination of Marx and Engels where capitalist producers of knowledge are distinguished from social consumers, social media collapses this distinction by creating 'prosumers', i.e. consumers who are simultaneously producers (see Ritzer et al. 2018). The imperative to maximise its prosumer base is consistent with Facebook's commitment to liberal principles of free speech and free association that, in turn, make it appear as the shell of a planet-wide virtual civil society.

However, on the democratically unregulated, commodified, and immaterial flat plane of the Internet, Facebook's profit priorities undermine its commitment to other conditions of a vibrant civil society. In particular, Facebook abdicates responsibility both for moderating the truth of political posts and the democratic filtering of information. As presently stands, a full-blown Fascist justification of the Final Solution, or the fabricated denial of its historical facticity, can stand equally both alongside each other and alongside other positions in the debate. In addition, rather than designing filtering mechanisms that alert individual users and give them access to the uneven diversity of available subject-positions within any area of discussion/information/knowledge, Facebook uses algorithms that bring like-minded people together into compartmentalised sub-groups that reinforce their existing views. This process deepens ideological divisions amongst the citizenry and offers collective confirmation that one's personal virtual reality corresponds with objective reality. In this twenty-first century reading, the postmodern malaise is less about being 'overloaded' by a cacophony of contradictory subject-positions and more about individuals only receiving information and analysis that confirm their existing worldviews.

The Alt Right has taken advantage of this ideological compartmentalisation by deploying forms of cynical manipulation that deny facts and generate disinformation. Moreover, in order to build its social movement, the Alt Right deploys this strategy to appropriate, upturn and 'mirror' the Left. First, the Alt Right has appropriated the Marxist critique that capitalist 'democracies' are actually driven by unaccountable bureaucratic state apparatuses that hide information about what is really going on, subvert the will of elected governments, while all along being in the service of powerful capitalist interests. The Alt Right's 'deep state' concept flips and redeploys this Marxist critique to discredit mainstream political views contrary to its own, thus making its social base immune to counter narratives. Relatedly, the anti-modernist Alt Right harnesses popular opposition, already fuelled by agents of the neoliberal project, to the impersonal 'iron cage' logic of the bureaucratic state. Second, the Alt Right has flipped intersectionality theory, reflecting it back like a mirror on to its original proponents. Intersectionality theory developed from the powerless subject-position of poor black women in the USA that stand in opposition to the powerful

white male agents of the capitalist patriarchy. However, the Alt Right has flipped this analysis by cynically constructing western white civilisation as fighting for its survival against the invasion of alien populations/nations/cultures/races (Gray 2018).

This twenty-first century version of the postmodern malaise makes urgent a democratic regulatory overview of Internet conversation. One way to address the problem of subject-position knowledge relativity as it manifests on the unregulated and global virtual world of social media is via a global democratic consensus regarding the rules for provisioning, moderating, and communicating political statements. In turn, this goal raises themes to do with mid-range projects for regulating capitalism.

The Neoliberal Model of Development and the Present Conjuncture

Model of Development

Generically, a 'model of development' refers to a national best practice that other nation states seek to emulate. Actually, Keynes' pioneering praxis goes beyond this meaning because it refers to an *abstract* national template that a group of countries is encouraged to adopt (Neilson 2020). More, the template's purpose is not simply to offer a model of best practice. Rather, the deeper aim is to construct an international regulatory architecture as an effect of the template's wide adoption that, in turn, sets the limits and possibilities of national economic and political practice.

Standard French Regulation School (FRS) theory provides a clear technical specification of a model of development as a 'mode of regulation', i.e. a set of rules of national economic practice in the form of laws, policies, and expectations, that coordinate a *stable* national 'regime of accumulation', i.e. a reproducing pattern of economic production, distribution, and investment. However, unlike my reading of the regulatory project that Keynes proposed at Bretton Woods in 1944, the FRS does not consider a model of development to be a deliberately designed project to construct consciously a transnational regulatory environment (Neilson 2012, 2020). Because they follow Althusser who rejected Marx's early work that centrally included 'praxis' that refers to knowledge transforming the world (Marx 1975), the FRS are unable to consider the causal role of prospective regulatory design for making a model of development (Neilson 2017, 2020). In addition, because methodologically nationalist, they underplay the transnational dimension. In sum, the FRS argue that the Fordist model of development, which refers to a mode(l) of regulation plus regime of accumulation that characterised *more or less* the national practices of advanced capitalist countries in the post WWII era, was a 'chance discovery' that arose contingently and independently out of the specific situations of individual nation states.

This Althusserian residue of the orthodox Marxist canon in FRS thinking thus prevents it from recognising how designs, plans, and projects are central for understanding both Keynesian and neoliberal models of development, and more importantly for making the future. In addition, because the capitalist world is increasingly global in its form and logic, the FRS's methodological nationalism decisively stunts its capacity to remain vital in the current era of neoliberal globalisation (Neilson 2012). As well, the FRS remains limited by its original analysis of the Fordist era that while brilliantly grasping how regulation can stabilise capitalism's inherently unstable logic, is unable to deploy its core concept of a 'model of development' in the neoliberal era because its regulatory architecture has generated deeply *unstable* economic patterns. I define a model of development as a transnational regulation-accumulation project based in the conscious design of an abstract national template, that once widely adopted, creates a national-transnational regulatory nexus that coordinates accumulation (Neilson 2020).

Neoliberal Model of Development and the Present Political Conjuncture

Agents of the prevailing neoliberal model of development consciously designed a pro-capital and pro-market regulatory national template that they have encouraged countries of the world to each adopt. The calculated transnational effect has been to extend market capitalism to a global level and integrally to deepen commodification. While consciously designed, democratically unaccountable global regulatory agencies have imposed this project on to the countries of the world.

As in the Keynesian model, the key to the neoliberal model of development is its abstract national template. Adoption of the external part of the neoliberal national template exposes a country to the gales of market competition by removing national protections so that capital in its various forms can move freely across national borders, while the domestic part facilitates capital's autonomy within a nation state (Neilson and Stubbs 2016). The transnational effect of countries adopting the neoliberal national template has been the creation of a near seamless global market terrain on which capital can move freely, i.e. 'neoliberal globalisation'. Individual countries become 'competition states' that, especially because capital is scarce relative to labour, must prioritise competitiveness in order to remain economically viable (Neilson 2020; Cerny 2010). Thus, directly contrary to the Keynesian model, the purpose and outcome of the neoliberal national template's widespread adoption have been subordination of nation states democratic autonomy to the capitalist priority of competitiveness (Hirsch 1997). Rather than a positive sum collaboration principle, countries compete against each other in a zero-sum game of winners and losers that as an international patterning expresses the present mid-range form of capitalism's uneven development.

The Decline of Democracy Under the Neoliberal Model of Development

Over the last four decades, the neoliberal project has systematically eroded uneven progress made over the last several centuries towards achieving democratic ideals. Multiple aspects of the neoliberal model of development viciously interact to undermine conditions of the democratic project, including:

– A democratically unaccountable design and deployment of its model of development that has transformed nation states into 'competition states'.
– Commodification of nearly everything everywhere that removes capacity for democratic regulatory oversight.
– Intensification of the uneven hierarchy of wealth and power across unevenly developing nation states that sets peoples against each other.
– Commodification of knowledge that has undermined cosmopolitan democracy and encouraged international and inter-cultural competition.
– Colonising democratic discourse with discourses of market individualism and enterprise society.
– Neoliberalising education through reduced public funding, privatisation, and ideological colonisation.

The neoliberal model of development's present descent into crisis opens up a space for contestation between those who continue to support it and those who push for alternatives. However, multiple factors have combined to ensure the descent of this war of position into a struggle between one catastrophically failing model of development and an even more destructively dangerous false alternative.

One is reminded of Gramsci's (1971) famous statement that 'morbid symptoms' appear in an 'interregnum', i.e. when the 'old is dying but the new is yet to be borne'. Yet it is more than a problem of gestation. In a way, the Alt Right's regressive nationalist project is the unviable structural offspring of the competitive logic of the neoliberal project (Neilson in press). The 'coercive whip' of competition between countries has created precarity, fear, and anxiety amongst the citizenry that has opened up a space for regressive nationalists to engage in neo-Fascist manipulation of the citizenry's political consciousness (Neilson 2015). Further, the pro-commodification and anti-democratic nature and consequences of the neoliberal project have systematically undermined pre-existing but fragile and unevenly formed conditions of a well-formed civil society at both national and transnational levels. In so doing, it has further enlarged the space for the Alt Right's cynical manipulation of the democratic will.

Addressing Bottom Up Top Down Dilemmas

The problem is still more complex if one acknowledges that a fully formed civil society implies knowledge conditions that include dedicated forms of information and analysis that do not simply arise 'organically' from everyday experience. That is, a dynamic and fully-fledged civil society does not only refer to the diverse everyday experience and views of the multiple social groups that comprise the citizenry. It also assumes knowledge workers who bring dedicated forms of information and analysis to the citizenry's attention. In short, the structure of a well-formed civil society comprises diverse and multi-layered information and communication. Moreover, 'freedom of association' that centrally takes forms of social movements and political parties united around common projects do not simply arise fully formed from the 'organic terrain' of everyday life. They are not only physically but also ideologically, organised. In sum, the direct and active movement 'from below' is insufficient in-itself to generate a well-formed social and political movement armed with a new progressive counter-hegemonic project. Such an outcome assumes intellectual work.

In *What is to be Done?* Lenin (1999) revises Marx and Engels' *Communist Manifesto* (1969) narrative by arguing that the proletariat will spontaneously develop only a Trade Union political consciousness and thus the achievement of a collective socialist consciousness critically depends on intellectuals. Gramsci's Leninism applied in a democratic context distinguishes between 'experiential' and 'theoretical' knowledge. Experiential truth comprises the palpable sensorium of everyday experience. However, especially in the diverse everyday forms that experience takes across the subaltern classes, it will not spontaneously aggregate into a collectively held theoretical knowledge. Such knowledge requires specialist intellectual labour to play its part. Further, Gramsci notes that political and ideological development of the 'subaltern classes' can be stifled because everyday knowledge stands in contradiction with ideologically dominant theoretical knowledge (Gramsci 1971: 333). More generally, multiple co-existing forms of knowledge can offer different explanations of the same experience and as well can prescribe different remedies (Neilson 2015).

In an interregnum, diverse experiential knowledge combined with the absence of a counter-hegemonic project opens up a space for a false alternative to connect cynically with the citizenry's experience. This is the problem of the present, yet the contemporary activist worldview treats a counter-hegemonic project as the upshot of direct action 'from below'. In Gramsci's Marxism, the point that Marx's (1975) 'thesis eleven' makes is that theoretical knowledge, 'from above', is also a central causal force making the world. In today's interregnum, intellectual contribution needs to focus on constructing the missing element, i.e. the blueprint of a progressive counter-hegemonic model of development. Further, following Gramsci's practical response to the elitism of Lenin's Leninism, the point is to facilitate a two-way interaction that consolidates as a 'social bloc' the holders of diverse experiential knowledge, i.e. the subaltern classes, and the intellectual holders of theoretical knowledge who have constructed a unifying blueprint of a counter-hegemonic model of development.

Those following Althusser's 'epistemological break' argument dismiss thesis eleven as Marx before his enlightenment, yet conveniently avoid dealing with the 'worst architect tale' in Marx's most mature analysis in *Capital* Vol. 1 that identifies the centrality of intentional human design for making the world. At the same time, the general silence on the decisive break in account between the analysis of *Capital Vol. 1* and that of the *Communist Manifesto* encourages reassertion of the latter's reassuring orthodox imaginary that posits the socialist proletariat as arising directly from the terrain of everyday experience (Neilson 2017, 2018a, b).

The problem is that the socialist project falls back towards a philosophy of spontaneity that posits *means*, i.e. collective action, but has nothing to say about *ends*, i.e. the project, the goal. As the technical requirements for conceptualising a democratic socialist global model of development with interacting national and transnational dimensions become even more demanding, the limitations of organic spontaneity and Marx's brief conceptualisations of democratic socialism become even more inadequate. Questions regarding the democratic socialist structure of representation or the democratic socialist framework of economic development suitable for a *national-trans-national* expression of Marx's undeveloped idea of the 'democratic association of the producers' continue to be un-addressed.

Towards an Alternative Model of Development

The democratic socialisation of knowledge necessary for a vibrant cosmopolitan civil society link with various themes of cooperation and collaboration, as well as with requirements for a cosmopolitan democracy such as the transnationalisation of welfare state conditions. In other words, the project to achieve a cosmopolitan democracy integrally leads to consideration of the conditions for achieving a socially democratic progressive alternative to the neoliberal model of development. In contrast to the prevailing neoliberal model, a social democratic counter-hegemonic regulatory project seeks to construct an institutional framework where rather than subordinated to the priorities of the 'competition state', countries are afforded greater democratic autonomy and support to pursue socially progressive forms of national economic regulation (Neilson 2020; Cerny 2010).

Such a counter-hegemonic project requires theoretically constructing and then practically deploying a 'model of development' that can overturn the neoliberal model's prevailing zero-sum logic of competition that has intensified unequal development across nation states. A democratic socialist alternative seeks a cooperative collaborative positive sum regulatory structure that reinforces the goals of cosmopolitan democracy by creating the possibility of universally sustainable yet diverse forms of local development. Central to such a project is the construction of a flexible regulatory national template that can accommodate and promote complementary diversity. Common to these developments is knowledge socialism, defined here as the democratic socialisation of knowledge at a global level, and that includes the establishment of a 'virtual global civil society' and a 'world knowledge bank'.

Political Considerations

Establishing interlocking institutions of democratic representation at national and transnational levels, i.e. of a 'cosmopolitan democracy' (see Held 1995), provide elements of an organisational way forward. That is, reformation of the institutional structures of the United Nations that bring in the Global South is an initial condition for the project of cosmopolitan democracy, and in turn is both a necessary political condition for pursuing, and an integral dimension of, an alternative model of development.

To be consistent with a planet-wide regulatory framework for a well-formed civil society, the present hierarchy of wealth and power behind the United Nations needs transforming into a genuine cosmopolitan democratic representational structure. That is, the framework of a fairer mode of cosmopolitan representation, which would practically validate principles of global cooperation, inclusion, and equality, also reflects basic values of a well-formed democratic civil society. In turn, such an emerging cosmopolitan constitutional framework can work through towards establishing rules regarding what comprises authentic facts and analysis, and what are democratically appropriate modes for sharing and communicating them. Such a transformation is a crucial condition for interconnecting different subject-positions in a decision-making process that can lead to a minimally sufficient planet-wide democratic consensus. Catch 22 problems abound, yet both projects validate each other and each project has independently compelling rationalities and momenta moving forward. These interlocking political dimensions, in turn, interconnect with the priorities of an alternative model of economic development that can replace the destructively competitive neoliberal model with an inclusive cooperative regulatory architecture that prioritises universal local material viability while celebrating national autonomy and diversity.

From Uneven Development to the Collaborative Articulation of Diverse Ways of Life

A post-neoliberal counter-hegemonic model of economic development is first a project to reverse the disastrous consequences of the neoliberal model of development. These centrally include accelerated ecological destruction of the planet, zero-sum competition between the nations of the world that are all subordinated to capitalist imperatives, and relatedly, intensified uneven/unequal development between and within countries.

The orthodox reading of *Capital* Vol. 1 is that Marx predicts that the logic of capitalism will engulf the planet in a single system. That is, uneven development, understood as the hierarchical articulation of countries at different stages of economic development will give way to a fully industrialised capitalist world. This *grand thesis of global homogeneity* has its origins in the *Communist Manifesto* where Marx and Engels argued that the logic of capitalism will generate a socialist proletariat whose

essential life conditions will be the same and will encompass the world's 'immense majority' (Neilson 2007, 2017, 2018a, b). Correspondingly, socialism is imagined as a world governed by the homogeneous global proletariat's appropriation of the planetary system of industrial capitalism.

Furthermore, because 'historical materialism' views communism as the final epochal stage of many stages of human civilisation, and where each stage negates the previous stage, then this process actually depicts a final triumph of the western mode of life including dominance of the industrial system of global production and Western conceptions of knowledge, science, and truth. 'Scientific socialist' projects in non-developed countries that embrace this narrative thus have promoted capitalist industrialisation and concomitantly, elimination of earlier capitalist stages and non-capitalist ways of life. Thus, in these times, developing 'market socialist' states have become agents of western neoliberal global capitalism that seek to destroy non-capitalist ways of life.

Rethinking the democratic socialist project in the twenty-first century as a counter-hegemonic model of development needs to reject the *grand homogeneity thesis* and its western underpinning. Sub-Commandant Marcos, spokesperson for the Zapatista movement of peasants and indigenous people in Mexico that took up arms against neoliberal globalisation, wonderfully expresses the imaginary for such a project as the creation of 'a world in which many worlds can fit' (Marcos 1996).

The first step in making this vision practical is rereading and reworking Marx. As stated by Marx in the Preface, *Capital* Vol. 1 is an 'abstract' not a 'concrete' account that, amongst other overdetermining forces, would need to consider ongoing consequences flowing from the political and economic interaction between countries at different stages of capitalist development (Neilson 2018a). If Marx had moved to this next step implied by his method, he would have been able to predict that such interaction would necessarily overdetermine the logic of global homogeneity and perpetuate uneven capitalist development. As well, Marx's (1976) account of the 'relative surplus population' that implies capital's global scarcity, reinforces the view that the 'laws' of mature capitalism actually and directly, and as empirically corroborated today, perpetuate uneven development (Neilson and Stubbs 2011; Neilson 2018a, 2020).

A counter-hegemonic democratic socialist model of development needs to prioritise reversing the coercive logic of zero-sum global competition that guarantees some national losers. For such non-competitive countries, lack of viable integration into the circuits of globally coordinated capitalist production combines with elimination of pre-existing ways of life/modes of production. In critical contrast, a cosmopolitan democratic socialist project for the twenty-first century seeks to construct and deploy a *cooperative* model of development that prioritises the goal of sustainable universal material security for all countries. However, to counter destructive consequences flowing from the *grand homogeneity thesis*, this should not mean that the project is therefore to facilitate *even development* especially if defined as a single planetary mode of advanced industrial production and associated way of life and forms

of knowledge. Repackaging Marcos' aphorism, the socialist project of the twenty-first century needs to envision a democratic socialist model of development that in going beyond the destructive hegemony of western capitalist modernity seeks the *collaborative articulation* of different principles of producing and living.

Towards a Democratic Socialist Model of Development

Stamping a neoliberal national template on to all countries regardless of their specific circumstances subordinates them to destructive zero-sum global market competition. This process that defines the essence of the neoliberal model of development is integrally about 'information capitalism' defined as the neoliberal global project to commodify all information, communication and knowledge. In contrast, a counter-hegemonic democratic socialist model of development aims to achieve a mode of global cooperation that can facilitate universally viable local regimes of accumulation that collaboratively articulate a diversity of local production modes. 'Knowledge socialism' defined as the democratic socialisation of information, communication, and knowledge is central to this counter-hegemonic project.

The neoliberal-led commodification of knowledge has directly undermined both political and economic knowledge socialism conditions that are integral to a democratic socialist model of development. Politically, the commodification of knowledge is undermining the achievement of a genuine global commons that could underpin cosmopolitan democracy. Economically, and the focus of this section, the neoliberal model of development has undermined the democratic socialist goals of universal local viability and cooperative diversity. Achieving these goals requires a flexible national regulatory template that can facilitate local regimes of accumulation. In turn, a democratic socialist model of development requires the democratic socialisation of knowledge in the form of a 'World Knowledge Bank' (WKB).

A Flexible National Template and Direct Regulation

Neither the Keynesian-Fordist nor the neoliberal-Toyotist model of development directly challenged capital's prerogative to construct the production process itself. Forms of regulation that protected labour in the Keynesian-Fordist era did *indirectly* constrain capital autonomy and managerial prerogative in the production process. In contrast, the neoliberal model of development has facilitated capital's autonomy to organise production transnationally. Neoliberal globalisation is also generating deepening ecological destruction, zero-sum international competition, breakdown of local economic self-sufficiency, and the destruction of non-capitalist modes of production and ways of life. Reversing the neoliberal model's regressive consequences and constructing in its place a democratic socialist model of development will, beyond the scope of previous models of development, require *direct* regulation.

This term refers to the facilitation and coordination of the production process itself. A counter-hegemonic model of development needs to both constrain global-scale capitalist production circuits (*indirect* regulation) and directly facilitate and coordinate modes of local production that are viable, efficient, ecologically sustainable, and collaboratively articulate a diversity of production principles.

To make such a 'world within which many worlds can fit' requires an enhanced role for democratically empowered transnational agencies. One imagines a collectively agreed global social contract founding a cosmopolitan democracy expressed in the common headline features of an abstract national template that prioritises goals of universal social inclusion, material security, protection of basic human rights, and the celebration of different ways of life. Correspondingly, the template would include a statement of commitment to a structure of international cooperation prioritising self-sufficient and ecologically sustainable local regimes of accumulation and the facilitating of the collaborative articulation of diverse modes of production/ways of life and associated forms of knowledge.

First, these commitments practically imply a framework of *indirect* regulation that facilitates cooperation between nation states. Constraining capital mobility by facilitating 'social democratic multilateralism', that runs directly contrary to neoliberal trade agreements, is useful here (see Harmes 2012). Such multilateral agreements across a group of countries would comprise progressive principles of regulation including labour and ecological standards, and the selective protection of local industries. Such agreements would effectively eliminate capital's present ability under neoliberal trade agreements to play countries off against each other in a competitive race to the bottom. In practice, such social democratic agreements would manifest in the form of the widespread adoption of common elements of an abstract national template. The fundamental challenge is that for many countries of the Global South, such agreements undermine pre-existing but regressive conditions of their competitiveness.

Second, and particularly critical for the countries of the Global South therefore, is facilitating the construction of local self-sufficient regimes of accumulation by directly regulating the practical form of production itself. Rather than being simply about directly facilitating advanced technological forms to lesser-developed countries, such regulation would be about promoting, protecting, advancing and articulating diverse existing principles of production and ways of life. For example, the creative articulation of diverse knowledge paradigms is central to the principles of local food production and the village way of life that new peasant and indigenous movements are promoting as an economically viable and ecologically progressive alternative to industrial chemical corporate agriculture (McMichael 2008).

A 'World Knowledge Bank' and 'Glocalisation'

The 'digital age' view was that Internet technology could directly deliver the knowledge conditions of a global virtual civil society where everyone would be able

to equally post, share and have access to free and comprehensive information. In contrast, 'postdigital' discourse (Peters and Besley 2019) challenges the naivety of the digital discourse by implicitly recognising the latest commons tragedy that comprises the unstable, inefficient, and regressive knowledge effects of the asymmetrical wealth and power relations of a capitalist world that have been accentuated by the neoliberal project to commodify both material and immaterial worlds.

Jandrić and Hayes (2019) examine how the commodification of knowledge has spread from the 'intellectual property' imperialism of multi-national corporations into the academy. In their discussion of challenges facing progressive counter movements of academic publishing 'from the margins', they draw attention to how far the neoliberal project has moved the world backwards from the 'knowledge socialism' aspiration of the UK Public Libraries Act of 1850. This Act 'enabled the advent of the modern public library: a state-funded institution, providing universal free access to books and journals for all citizens' (Jandrić and Hayes 2019: 384). Today, the project of a 'World Knowledge Bank' (WKB) aspires to fulfil the aspiration of the public library globally by providing free access to the *sum-total of human knowledge* for all citizens of the *world*.

A WKB would also build beyond the Public Library aspiration. First, by having global cosmopolitan aspirations, the WKB would go further than the Public Library's Eurocentric inspiration to spread Enlightenment discourse. That is, the WKB would aspire to become the globally socialised repository of all human knowledge paradigms thus spanning the diversity of human civilisation. Second, the WKB would have development functions. It would tender for knowledge projects that can both address limitations in the existing repository and respond to challenges thrown up by real-world problems. In particular, the bank would encourage new research that can facilitate local development. Relatedly, a WKB would seek to acquire private capitalist knowledge, which subsequently would be distributed universally and freely to the nations of the world. This development function could involve global private public partnerships based in the WKB's purchase, on behalf of the world's citizenry, of both discursive and practical forms of intellectual property. An immediate priority under a democratic socialist model of development would be to facilitate practical knowledge -bundled with resources and practical expertise, that could facilitate viable local regimes of accumulation for the uncompetitive countries of the world.

The WKB would become a key agent of an alternative model of development that would break with cspital's hitherto autonomy to design, deploy, and develop production paradigms. In its place, the WKB would become a key agent facilitating a particular form of 'glocalisation'; one that is based in a cosmopolitan democratic project to globally collect and deploy knowledge for the advancement of localised forms of producing and living. The WKB would thus practically facilitate the global socialisation of diverse forms of knowledge. Paradoxically, a central purpose of this accentuating of immaterial globalisation for which there are no dis-economies, would be to reverse global dis-economies and 'dis-ecologies' of material capitalist production by revitalising local accumulation regimes (Neilson 2013). Moreover, the WKB would be central to the development of locally self-sufficient accumulation regimes that both build from local pre-existing principles of producing and living

while simultaneously articulating local principles, with diverse (but complementary) forms of knowledge and expertise.

Such a project decisively moves the world away from a world of competition between countries and the private capitalist holders of intellectual property and towards global nation state partnerships that seek to share knowledge and expertise in ways that would enable each country to develop its own version of sustainable self-sufficiency. Rather than the imposition of a single global capitalist technology paradigm that destroys all other paradigms that characterises the present trajectory under the neoliberal model of development; this project aims to construct a development logic that would facilitate creatively interacting production paradigms.

The democratic socialist regulatory project seeks to replace the uneven development of western capitalism driven by the zero-sum competition model of the neoliberal model of development with a counter-hegemonic model that will facilitate positive sum collaboration, diversity, ecological sustainability, and universal self-sufficiency. The democratic socialist model of development, for which a world knowledge bank is a key feature, would displace hitherto capitalist autonomy over production by constructing a world of global cooperation dedicated to the facilitation of universally sustainable, locally specific yet creatively interacting models of production.

Conclusion

Contemporary technologies of the immaterial world of information and communication have created unparalleled possibilities for the global exchange and development of knowledge. However, in the present era of the neoliberal model of development, neoliberal-led knowledge commodification is undermining technological possibilities for achieving a genuine global knowledge commons.

The chapter began with a 'knowledge socialism' reading of the tragedy of the commons applied to the neoliberal-led commodification of the Academy and the Internet. Building from the counter-hegemonic project to socialise academic knowledge, this essay went on to introduce features of a democratic socialist model of development. Special focus was on constructing its essential knowledge conditions: a well-formed 'virtual global civil society' and a 'World Knowledge Bank'.

Within this perspective, this essay critically engaged with the destructive effects of the Eurocentric limitations of orthodox Marxism and 'scientific socialism' that have undermined diverse ways of life. Reimagining the socialist project in the twenty-first century focused on the construction of a democratic socialist model of development that can practically create a 'world within which many worlds can fit'.

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David Neilson is a Senior Lecturer in Sociology at the University of Waikato in New Zealand. He publishes mainly in the fields of class theory and political economy. His most recent papers include 'Bringing in the neoliberal Model of Development' and 'In-itself For-itself: Towards Second Generation Neo-Marxist Class Theory', both published in *Capital and Class*; and 'Re-situating *Capital* Vol. 1 beyond Althusser's epistemological break: Towards second generation neo-Marxism' published in *Continental Thought and Theory*.

Chapter 9
The Rehabilitation of the Concept of Public Good: Reappraising the Attacks from Liberalism and Neoliberalism from a Poststructuralist Perspective

Mark Olssen

Arguing for the Public Good

I argue in this chapter that the concept of public good needs rehabilitating as a normative value necessary to guide politics in a global age. While many would pay lip-service to such a thesis today, to argue the case means to argue against the mainstay of liberal economics and political theory during most of the twentieth century. I will show why perspectives that deny the existence or possibility of a public good are mistaken. The good, I will claim, represents shared interests and concerns between people, that is, interests held in common, and as such represents the normative expression of the collective dimension of politics. It is this collective dimension of politics which I claim must be articulated today in order to satisfactorily understand how issues like individual interests and liberty can be theorized.

Although this essay is not the first to advocate for a conception of public good, it will seek to justify the postulation of the concept in a novel way. Without intending to provide a comprehensive list, those advocating for some use of the concept of the public interest or public good include Wilson (1887), Dewey (1927), Lippmann (1927, 1955), as well as a varied assortment of academics.[1] We could add to this list any number of major political philosophers, including Jeremy Bentham, Karl Marx, G.W. F. Hegel, J. J. Rousseau, T. H. Green, F. H. Bradley, Bernard Bosanquet, Karl Polanyi, Karl Mannheim, Harold Laski, R. H. Tawney, R. G. Collingwood, Hanna Arendt, to name but a few. Rather than seek to summarize individual viewpoints,

M. Olssen (✉)
Department of Politics, University of Surrey, Guildford, UK
e-mail: m.olssen@surrey.ac.uk

however, I will simply focus on the major pivots of focus in broad terms. These can be categorized as (a) utilitarianism, (b) liberal, and (c) normative approaches.

Utilitarianism, championed initially by Bentham, advanced aggregative approaches, which is to say that the public good represented simply the aggregation or summing of individual self-interests or preferences. It has been influential as a basis for welfare economics, and as intended by Bentham at least, constituted a movement of social reform which sought to 'maximize' the good, defined in terms of the principle of utility, i.e., 'the greatest happiness of the greatest number'. In its classical form it was premised upon the assumption of individual preferences calculated on the basis of the pleasure or pain experienced by each individual. It is the concept of interests that constitutes a major objection I have to the theory. Value is defined in terms of pleasure or happiness in purely subjective terms. The lack of any 'external', or 'objective' criteria for determining value, and its failure to adequately theorise the inter-personal dimension of selfhood in order to provide an objective criterion of human needs is a major weakness. My view owes some debt to Thomas Scanlon who also rejects subjective preferences as the basis for the valuation of outcomes, arguing for 'an objective criterion of the relative importance of various benefits and burdens' (1978: 95).[2] Such a view is important given that people can have inconsistent desires, mental health problems, varying levels of incapacity, where their own subjective interests become a poor basis for enacting policy or guiding politics. Frequently people are unclear as to what their self-interest is or how to obtain it.[3] In addition, the interests and preferences of people frequently conflict.

Although utilitarianism has been taken into account, my argument employs a normative model of the good. While this recognises subjective interests, it places greater attention to shared interests, objective interests, and needs, and it theorises these in relation to institutional processes of democracy. I will argue that the concept of 'self-interest' that guided the liberal economists and political theorists of the twentieth century, whose views will be surveyed briefly below, have not proved adequate to understanding politics and the logic of collective action in terms of which politics operates. The collective dimension of individuals lives cannot be articulated or represented through aggregating interests. It is not simply that individuals may be mistaken as to their own interests, or that they experience vulnerabilities and dependencies where they frequently require assistance, but the method of aggregation employed fails to articulate a method or process whereby individual interests can be represented at the collective level.

My own approach has also been influenced by poststructuralist political theory. This can offer a reinterpretation of politics and knowledge in the light of the new science of complexity that seeks to offer a normative justification of the common or public good in non-teleological, non-dialectical, and non-religious terms, and subject to democratic constraint. It also takes power relationships into account as an integral component of normative theory and helps to understand liberal approaches in a new light. The individualism that grounds the ontology of twentieth century liberals, whether economists or political theorists, can no longer receive support from the physical sciences in the way most thought to be the case. Many explicitly harked

back to eminent Enlightenment philosophers such as Condorcet, Hobbes, Locke, Descartes, or Kant, who in turn developed their own writings homologous with Newton and in conformity to the classical synthesis. That the defeat of the classical model of science and rise of complexity approaches from the start of the twentieth century, including quantum and post-quantum approaches,[4] the seminal contributions of Henri Poincaré[5] and Albert Einstein,[6] has constituted a revolution in science characterised by a change from individualism to systems theory; and from reductionism to non-reductionism. The implications of this are far more profound than liberal philosophers have acknowledged. Instead of seeking to theorise the collective out of existence, it is necessary to articulate and consider both the collective and individual dimensions of politics. In a systems approach, while the living are morally foundational, it is no solution to deny the efficacy of the collective or political levels of existence. Science is something quite different to what it was held to be in Newton's day. Science can now theorise holistic entities, interconnectedness, collective politics and ideas of the common good in thoroughly scientific, materialist, or naturalist terms. Largely unaware of the implications of the shift from ontological individualism to a systems approach, most economists and political theorists in the twentieth century have continued to be guided by the axioms and spirit of the classical model, and have been unsympathetic to ideas of the public or common good, to holistic analyses, or to notions of the collective as integral dimensions of selfhood and politics.

Although poststructuralist and postmodernist philosophy has been slow to develop normative theories, notwithstanding work by Badiou (2001),[7] Levinas (1969, 1985, 1998) and Derrida (1978, 1995, 1999, 2001), I offer a model of what I term 'continuance ethics' or the 'ethics of life continuance' as a contribution to this area. Although influenced by poststructuralism, as well as anglophone Utilitarianism, the difference with the latter are sufficiently great to warrant a different term. In brief, continuance offers an objective rather than subjective theory of value and is concerned with (1) survival as a collective and individual project, and (2) well-being, where well-being is satisfied if (a) basic needs are provided for, and (b) opportunities, benefits and burdens are distributed justly. Normatively, it specifies an ethic of equal consideration for all where such an ethic can be justified both instrumentally and probabilistically as constituting the best (i.e., most likely) policy to ensure life continuance for all. To denote this, it takes 'Bentham's dictum', as cited by Mill, the maxim that 'everybody to count for one, nobody for more than one' (1910: 58).[8] Policies, values, actions, principles, and ways of life deemed to be valuable for traversing the future, are claimed to constitute an objective basis for establishing a conception of good. Unlike utilitarianism, the aim is not to make the majority better off, but to ensure the survival and well-being of all as the best policy for assuring the survival and well-being of each.

Continuance ethics as set out in previous work (Olssen 2009, 2010, 2015a, b; Olssen and Mace 2021) is premised upon a constructivist historical ontology that asserts the irreducibility of the normative,[9] paired with an anti-foundationalism that is disjunctive with other ethical systems on offer, viz. Kantian, Aristotlelian, Hegelian, Marxist, Utilitarian, Social Contract, Levinasian or, conceptualised in

terms of familiar themes: 'ethics of identity', 'ethics of difference', 'multicul-turalism', 'dialogical ethics', 'liberal ethics', 'alterity', and so on. In contrast to approaches in postmodernist ethics, informed by Levinas or Derrida, continuance ethics aims to consistently represent, develop out of, and express, the poststructuralism of Foucault. While the theoretical depth of this analysis is further articulated in other work, in this paper I aim to demonstrate how the concept of life continuance can lend normative support to a political ethics that can aid democracy and constrain the ship of state.[10]

I will argue in this paper that a conception of public good is required, not just for politics, but for education, economics, and ethics and morality as well. I will argue further that such a proposition can today be justified as congruent with the major onto-epistemological postulates of science, as it has been reconfigured from the start of the twentieth century. Importantly, here, the systems perspective I will employ dictates that meaning is both public as well as individual. I will argue that even moral labels of right and wrong are not definable unless a meta-conception of value, that is, a good, is presupposed; and further, that liberal ideas of freedom are indistinguishable from licence unless a prior public conception of value is assumed. In this sense, I argue that all values are social in the same way that the subject is socially and historically constituted. It is because norms of continuance are public that they constitute the sources of our ethical and moral beliefs. Liberals have failed to understand the true sources of values and normativity, just as they have failed to understand that from the start of the twentieth century, science no longer grounds their individualist ontology.

Not all the Anglo-American philosophers shared the individualism over onto-epistemological axioms that I am charging the liberal economists and political theorists above. One who was ahead of his time was von Wright (1963a) who was aware of the central importance of the social and cultural basis of value. Von Wright suggests that a meta-ethic is presupposed even in the definition of our ordinary moral labels:

> That good is better than bad obviously is a *logical* truth. But it is not a truth of 'ordinary' logic. Someone may wish to say that it is a truth 'by definition'. But what *are* the definitions of 'good,' 'bad,' and 'better,' which would show that good is better than bad? It is not at all obvious how this question should be answered (von Wright 1963a: 42).

In this sense, I will argue that a conception of good far from being inimical to liberty is required for it. While individuals' actions will be situationally specific and require technical, judgmental and strategic skills, the ontological source of their ethical categories and definitions are public. It will be shown further that institutional development, including public education, presupposes a conception of good as an effective precondition for individuals' development, including agency and liberty. In this sense, I will claim, that the public good establishes norms of moral action which obligates members of society to act in certain ways. I will further claim that a such a conception of good, is indeed 'comprehensive', in the way Rawls' opposed, and can act fairly in its treatment of different citizens through democratic processes.

Although it may not always be strictly 'neutral' with respect to all the different ends of private actors, such a conception can be *fair* in the context of a deeper commitment to the future well-being and survival of humanity in general.

Attacks Against the Idea of Good

The attack on the idea of a public interest, or public good, can be seen developing in America since the 1930s in the work of writers like Henry Calvert Simons, father of the Chicago School of economics,[11] and Kenneth Arrow, who became associated with Social Choice theory, and was to become a major influence on writers like James Buchanan and other writers associated with the 'new right'. A major effect of Arrow's work was to severely restrict the legitimate role of the state. As Sen (2002: 330) reports, Arrow had been asked by Olaf Helmer, a logician at the Rand Corporation, 'In what sense could collectivities be said to have utility functions?' Arrow determined that no satisfactory method for aggregating a multiplicity of orderings into one single ordering existed. Hence, there was 'a difficulty in the concept of social welfare' (Arrow 1950, the title of the article). The outcome was a Ph.D. that formulated the General Possibility Theorem, which was a modification of the old paradox of voting. As Sen (2002: 262) notes, this theorem was 'an oddly optimistic name for what is more commonly—and more revealingly—called Arrow's "impossibility theorem,"' in that it describes 'that it is impossible to devise an integrated social preference for diverse individual preferences.' Arrow's claim, essentially, was that a unified coherent social welfare function, expressing a single value, such as a public interest, could not be expressed from the disaggregated preferences of individuals, without dictatorially discounting some at the expense of others. As Arrow (1951: 24) states it:

> If we exclude the possibility of interpersonal comparisons of utility, then the only method of passing from individual tastes to social preferences which will be satisfactory, and which will be defined for a wide range of sets of individual orderings, are either imposed or dictatorial. (emphasis in original).

In Sen's account, Arrow's work was central to developments in welfare economics and 'fits solidly into a program of making the analysis of social aggregation more systematic' (Sen 2002: 343). Such work has relevance, says Sen (343), 'in the context of political thought in which aggregative notions are used, such as the "general will" or the "common good" or the "social imperative."'

Arrow's work was also to influence James Buchanan, the father of public Choice theory. Two of Buchanan's articles published in the *Journal of Political Economy* reveal the major influence of Arrow's work in his own conception of the public interest.[12] As aggregating or 'summing' of individual interests to get a 'public good' was not deemed logically possible, Buchanan and Tullock proposed a 'unanimity

rule' as the only feasible decision-rule that could guide government, but then imme-
diately agreed that 'it seems highly likely that agreement would normally be almost
impossible' (Buchanan and Tullock 1962: 69).

Lying behind such an analysis is a strong normative commitment to free-
market individualism which for Buchanan provides a common rationality linking
the economic and political worlds. This libertarian quality of Buchanan's work is
reflected also in his deeply individualist approach to public affairs. As far as polit-
ical prospects were concerned, only those that resulted from the subjective choices
of individuals were acceptable. Collective entities such as a 'society' or 'the public
interest' were held not to exist because they were reducible to individual experiences.
This 'methodological individualism' was fundamental to Buchanan's reduction of
collective entities such as the public good, to the dispositions and motivations of indi-
viduals. As he acknowledged in *The Calculus of Consent*, 'the whole calculus has
meaning only if methodological individualism is accepted' (Buchanan and Tullock
1962: 265).

It is on this basis that Public Choice theory attacks as 'myth' the idea that govern-
ment or public service is able to serve the public good. Influenced by William
Niskanen on 'bureaucratic growth'; Anthony Downs on 'political parties' and
'democracy'; Mancur Olson on 'interest groups'; and Gordon Tullock on 'rent-
seeking' behaviour,[13] it asserts the view that the notion of the public good is a fiction
which cloaks the opportunistic behaviour of bureaucrats and politicians as they seek to
expand their bureaus, increase their expenditures, and maximise their personal advan-
tages. In *An Economic Theory of Democracy*, Anthony Downs (1957) applied public
choice axioms of 'self-interest' to politics. In *The Limits of Liberty* (1975), Buchanan
maintains that a coincidence of interests between the civil servant's private interests
and their conception of the public interest ensues, such that 'within the constraints
that he faces the bureaucrat tends to maximise his own utility' (Buchanan 1975: 161).
By such an approach, as Brian Barry argues in *Political Argument* (1990), Buchanan
and Tullock 'aim to destroy a whole tradition of political theorizing' (256). Essen-
tially, 'the public has no place in their world'. This is the tradition that recognises the
existence and 'promotion of widely shared common interests—public interests—the
most important reason for the existence of public authorities' (256).

An attack on the good can be seen also in political economists like Joseph Schum-
peter, whose book *Capitalism, Socialism and Democracy* (1976/1943), expressed the
classical episteme of science as it had rejected medieval frames of thought, linking
the concept of good to the classical doctrine of democracy. Schumpeter identified the
pre-Enlightenment philosophy of democracy as 'that institutional arrangement for
arriving at political decisions which realize the common good by making the people
decide issues through the election of individuals who are to assemble in order to carry
out its will' (1976/1943: 250). The common good functioned as 'the obvious beacon
light of policy which is always simple to define and which every normal person
can be made to see by means of rational argument' (250). Schumpeter opposed the
idea. First, he denied any notion of 'a uniquely determined common good that all
people could agree on or be made to agree on through the force of rational argument'.
Second, he appealed to the fact that 'some people may want things other than the

common good' as well as 'to the much more fundamental fact that to different individuals and groups the common good is bound to mean different things' (251). Third, even if a general good, such as the utilitarian good of maximizing pleasure, could be agreed upon, essential conflicts (such as whether 'socialism' or 'capitalism' should prevail, or over the limits and nature of 'health', for instance) would be left unresolved, thus conflict would remain (251–252). Schumpeter's criticisms represented a condemnation of the two major senses of public interest or good that were present when he wrote: first, against aggregative conceptions, such as utilitarianism, which claimed that the good represented the 'sum' of individual interests; second, against normative conceptions, derived philosophically rather than empirically, associated with Plato, Marx or Hegel.

Attacks on the idea of the good were also to receive support from mainstream political liberalism from the second half of the twentieth century, as developed by the likes of Rawls (1971), Nozick (1974), Ackerman (1980), Dworkin (1978), and Popper (1962). The approach was in terms of deontology versus consequentialism, science versus teleology, or neutrality versus perfectionism.[14] Arguments were anti-teleological, claiming that no general good, or *summon bonum,* exists that can furnish a non-despotic conception. Popper can be seen expressing this view in a nutshell: 'most of the modern totalitarians are quite unaware that their ideas can be traced back to Plato. But many know of their indebtedness to Hegel … They have been taught to worship the state, history, and the nation.' (Popper 1962: 11) In Popper's view, Hegel takes Plato to new heights with his 'insistence upon the absolute moral authority of the state, which overrides all personal morality' (1962: 31).

In common with Schumpeter, twentieth century liberals opposed conceptions of the public good on the grounds that the idea represents a danger to liberty. Throughout the twentieth century, it was generally true that the conception of the good as a criterion of morality and value became superseded by the idea of rightness where the individual's duties were taken as the locus of value. For classical liberals, the argument was represented in terms of a preference for 'state neutrality' and against what they called 'state perfectionism,' the latter which defined ends in relation to pre-established values. The case against perfectionism was developed also by Rawls in *A Theory of Justice* (1971: 291–292) where he explicitly rejects perfectionist public policies such as 'subsidizing universities', or 'opera', or 'theatre', on the grounds that these institutions are 'intrinsically valuable'. For state action on perfectionist grounds could only be justified based on 'unanimity', and unanimity, as Rawls had learnt from James Buchanan and Gordon Tullock, was almost impossible to achieve. For Rawls, perfectionism entailed that the state favoured unitary moral ideals, such as expressed in the idea of a public good and could not be neutral in the sense they represented all actors. Liberal theory should favour 'neutrality' which flows from the social contract which enables individuals to pursue 'their own good in their own way', free from 'coercive' notions such as public good. Thus, the foundation for political authority for Rawls is not the common good, but the free contract of rational individuals.

For Rawls, any theory which prioritizes the good over the right means that individual values and ends are sacrificed, or compromised, for collective ends. Although utilitarianism proposed a more empirical model seeing the good as the aggregation

of individual interests, thus avoiding commitment to positing good as an independent normative value, it was criticised by Rawls because it promotes the priority of maximizing aggregate utility or happiness, and then defines right conduct as what maximizes good. As such, it ignores the 'separateness of individuals', says Rawls, because it relies on a 'trade-off' across lives' (1971: 27). As Kymlicka expresses the point, 'it generalizes from what is rational in the one-person case to what is rational in the many-person cases' (1991: 23). Consequently, a single individual must sacrifice her own benefit for someone else, or on the altar of some conception of collective happiness.

Given these views, it is not entirely surprising that in the second half of the twentieth century some social scientists rejected the concept of the public interest out of hand. In his book, *The Public Interest* (1960), Glendon Schubert labelled the concept as a 'childish myth' (348) and concluded that 'the concept is best discarded altogether' (223–224).[15] Political scientists, Robert Dahl and Charles Lindblom concluded that 'a precise examination would show that [the term public interest] can mean nothing more than whatever happens to be the speaker's own view as to a desirable public policy' (1963: 501). In a similar way, Frank Sorauf argued that the concept should be 'expunged from vocabularies' (1957: 638). Clearly such a concept was not in favour, after being represented throughout much of the century as being incompatible with the dictates of science. One must at least entertain the proposition that fashion rather than reason accounted for their arguments. As Lewin expresses the point, '[d]uring the 1950s and 1960s the scientific approach adopted in the natural sciences became the ideal among trend-setting social scientists' (1991: 2).

The liberal social contract thinkers tried to represent anything but the direct aggregation of the preferences of individuals as suspiciously dictatorial. Claims to define the objective, i.e., real interests or needs of individuals, requires a dictatorial intervention in their view. Yet, it is my contention that they failed to focus upon the institutional processes by which individuals are represented at the level of the collective, that is, the mechanisms and processes of procedure by which individual interests can be collectively expressed and acted upon. As democracy is the institution through which individual aspirations and considered convictions are translated into collective action, through the intermediary processes of government and democratic institutions, under the watchful eye of the media, and subject to checks and balances, these democratic processes constitute a more effective and more reliable mechanism for representation of 'interests' than any 'sleight of hand' of claiming to focus on 'preferences' directly. The democratic process is the mechanism through which the real interests of individuals are articulated as a public good. For it is the democratic process that ensures that individuals concerns are debated, deliberated, adapted and refined, where the method of 'reflective equilibrium' becomes institutionalised to ensure effective on-going, self-correcting, representation and action. The democratic process constitutes the mechanism through which the interests of individuals are represented, and their integrity and rights respected.[16]

It is this attention to process and procedure that the liberal economists failed adequately to articulate in my view. Their grounds for making preferences ontologically primary were tied to their social contract assumptions. In Buchanan and Tullock, the contractarian assumptions were those of self-interested maximizers and a laissez-faire market. As Jules Coleman maintains, '[t]he contractarian approach to collective choice is to ask which voting rule rational persons would choose' (1989: 210). In advocating a 'unanimity rule' Buchanan and Tullock have given rise to an industry of analysis and criticism which I am not intending to survey in detail here.[17] Suffice it to note that the demand for unanimity as a decision rule romanticizes the market as the bedrock for politics, falsely claims to be in accord with science, and relies on a model of laissez-faire and competitive economics that is not realistic.[18] A voting rule to be fair must be normatively meaningful.[19] The unanimity rule proposed as the optimal decision-rule for politics constitutes, as many have observed, a conservative defence of the status quo.[20] Paradoxically, if adopted as a universal rule, it denies that different decision-rules may be relevant at different times; it enables the minority to tyrannize the majority and prevent change; it ignores the costs associated with engineering unanimous consensus and the sheer inertia that would result from a government's inability to carry out change (including its electoral pledges); and it fails to explain why other decision-rules (e.g., majority rule, two-thirds majority) are not satisfactory. Indeed, in a frequently cited article, Rae (1975) put forward a contractarian defence of majority rule maintaining that consensual decision-making as put forward by Buchanan and Tullock (a) doesn't lead to greater efficiency and (b) that it is simple majority rule that in fact maximizes the convergence between public choice and individual preference.[21]

The Complexity Turn: Quantumizing the Social Sciences

The reductionist views of the liberal philosophers above must in this sense be seen today as incongruent with emerging new paradigms of science. This new paradigm of science requires (a) a social and historical conception of the subject, of knowledge, and of value, and (b) a systems approach which theorizes the collective dimension of politics as a non-reducible aspect of the coordination of life. Consequently, the liberal philosophers failed to represent individuals sufficiently as social and historical subjects who are interconnected and interdependent with each other and to the structures of social and political support. Writing as they do from a flawed conception of the subject, guided by the ontological individualism that characterises their philosophical world view, it is not surprising that they have difficulty theorising how both the collective and individual dimensions of policymaking are not just important but essential to politics.

Rehabilitating the idea of the good is thus assisted in that it is more in accord with the spirit of science today. At the start of the twenty-first century, developments in science radically reconstructed our ways of understanding the world.[22] The first crack in the classical Newtonian synthesis came at the very start of the century

with Rayleigh and Jeans' study of black body radiation, followed in quick succession by the research of Max Planck,[23] Henri Poincaré,[24] Albert Einstein,[25] and the quantum theorists, Niels Bohr,[26] Werner Heisenberg,[27] Erwin Schrödinger,[28] and Paul Dirac.[29] The old certainties of the classical paradigm were not just revised, but substantially reconceptualised. At the microscopic level, the laws of quantum mechanics superseded those of classical mechanics; at the level of the universe, Newtonian physics has been surpassed by relativistic physics. Although classical mechanics remains valid, it has undergone substantial revision in terms of its major concepts.[30] In terms of complexity formulations that subsequently influenced poststructuralism, Poincaré's research was pivotal. Poincaré advanced the field of 'topology' and 'systems thinking' in mathematics, opposed logicism in favour of an historical approach, and his work on the stability of the solar system (the three-body problem), dynamical systems theory, and recurrence, established the foundations of chaos theory.[31]

Poincaré was to influence the work later in the century of the Belgium physicist/chemist, Ilya Prigogine. In a range of publications from 1980s to 2004 Prigogine developed a complexity formulation relevant to both the physical and social sciences. In works such as *Order Out of Chaos* (1984), written with Irene Stengers, and *Exploring Complexity (1989)*, written with Grégoire Nicolis, it is claimed that complexity theory offers a bold new and more accurate conception of science and the universe. This new conceptualisation is superseding standard models including quantum mechanics and relativity which came to prominence at the beginning of the twentieth century as 'corrections to classical mechanics' (Nicolis and Prigogine 1989: 5). Prigogine criticizes Newtonian mechanics and quantum theory which represented time as reversible, meaning that it was irrelevant to the adequacy of laws[32]. Complexity theory builds on and intensifies the 'temporal turn' introduced by this 'correction'. Prigogine places central importance on time as real and irreversible. With Newton, say Prigogine and Stengers (1984), the universe is represented as closed and predictable. Its fundamental laws are deterministic and reversible. Temporality is held to be irrelevant to the truth and operation of the laws.

The 'complexity turn' (Urry 2005) enables us to re-frame idealist insights and understand liberal objection to theories of the good in a new light. Complexity theory reinstates a holism of *reciprocal interactions of system and parts* which replaces the priority in idealist philosophy of the *whole determining the parts*, and the consequent over-emphasis upon uniformity. The thesis that the properties of wholes cannot be accounted for in any simple additive sense as an aggregation of its component parts constitutes an ontological principle as relevant to the social sciences as to physics and chemistry. New properties arise through the interactions of parts through the process of *emergence.* Emergents are defined as 'the simple effects of combined actions' (Morin 2008: 100). In an open system, possibilities are endless. Such processes operate within open systems where parts and wholes are linked in a dynamic and precarious and unstable tension. Systems comprise 'polyrelational circuits' made up of 'elements', 'interrelations', 'organization' and 'whole'. As such, the system is 'a totality of polycentric dispersion' where small perturbations can derail and effect the whole (2008: 104). Society can be viewed in such a model as a complex dynamical

system. In such a conception, 'the notion of emergence is at the very heart of the theory of the system' (2008: 105).

As such, '[t]he system … is neither "form", nor "content", nor elements conceived in isolation, nor the whole itself, but all of these linked in and through the organization that transforms them' (2008: 107). Within any system, both the macro-structure and micro-structure of parts interact, mutually affecting each other, and permitting indefinite recombination, thus ensuring new entities and structures to emerge. Language, the brain, consciousness, and life, can be seen as emergent phenomena. It is through interactions at different magnitudes, which push a system beyond a threshold, that ontological emergence takes place, and it is this that defeats the possibilities of reductionism.[29] Emergence, says Morin, 'implies a rootedness in what is non-reducible and non-deducible, in what in physical perception resists our understanding and our rationalization' (Morin 2008: 105). Because relations and occurrences are contextual and contingent, it is not possible to predict macro properties from a knowledge of the micro and vice versa. It also defeats the possibilities of universal laws as constituting a sufficient explanation for events—context is all. In this systems paradigm, the dynamic and non-linear assert themselves alongside the static and linear, and non-equilibrium and equilibrium operate as both temporary and intermittent. Additive and linear models are now supplemented by non-additive, dynamic and non-linear ones. The ontological idea of a closed universe, an idea which came out of the Middle Ages, and which still characterized Hegel's thought, became replaced, as Koyré (1965, 1968) notes, by the conception of an open universe characterized by infinite possibilities, uncertainty, and chance.

One implication of complexity is that priority is placed on political regulation as a positive state mechanism for the management and coordination of matters of urgency, economic failure, as well as for the provision of structures of services and opportunities for citizens. This reflects the complexity postulates of interconnectedness, interdependency, vulnerability, and insufficiency of the parts in relation to the whole. Such interdependencies and vulnerabilities would prima facie appear to lend support to the idea of a more active state where independent political coordination at the level of the system or collective is required. This contrasts with the liberal idea of a minimal state which might appear justified in terms of a notion of individual autonomy. Although Hegelians like Green appealed to idealism on matters of mind and truth, writers like Foucault theorised the rise of positive state power, not as liberals do, as an errant political choice, but unavoidably, as the result of materially instantiated changes in the structures and processes of the early modern period. For Foucault, positive state power—'bio-power'—represented a new material modality of power consequent upon the emergence of the state system and the necessity of state regulation. States pursued positive public purposes because they couldn't do anything else.[33] The public good becomes more significant, then, as societies change, manifesting increased real shared concerns and interests. Collective politics becomes *necessary,* it can be argued, consequent upon the onset of crises, increases in population, conflicts over state boundaries, the increasing importance of health, natural calamities, etc. And as the collective becomes more necessary, so too does the good.

Complexity theory also enables a resolution of another core criticism of idealist philosophy by classical liberals. This concerns the over-emphasis on unity, as expressed in the 'doctrine of harmony' between the state and the citizen. This was a consequence of the fact that, in Hegelian philosophy, the whole determined the character of the parts, thus resulting in uniformity. Liberals criticized the idealists for positing man as citizen who existed only as a public being within the shadow of the state (Government + Civil Society = State) and 'imprisoned by its own creation' (Seth 1897: 291). Both German and Oxford Idealism posited as essential unity between the individual and society. As James Seth explains it:

> So perfect was the harmony between the individual and the State, that any dissociation of the one from the other contradicted the individuals' conception of ethical completeness. It is to this sense of perfect harmony, this deep and satisfying conviction that the State is the true and sufficient ethical environment of the individual, that we owe the Greek conception of the ethical conception of the State (Seth 1897: 282).

The innovation of complexity dynamics, through its emphasis on the reciprocal interaction of part(s) and whole, introduces a new nominalist conception of iteration where the future doesn't simply repeat the past and where repetition or reproduction of structures and identities over time both reproduce the past in the future and also simultaneously individuates or differentiates its different elements in relation to the whole. In this way harmony or uniformity is theorized in terms whereby uniqueness and difference are simultaneously enacted. Repetition is characterized by difference and the future is marked by uncertainty and rupture. While every action in time bares the character of what went before, each also necessarily differentiates itself within the whole. There is an irreducible dependence of the individual on the social and the general, yet also an infinite individuation and differentiation of each element within the whole. Another consequence explains how the individual subject can be both historically and socially constituted, yet unique. While each subject lacks an essence or substance (*ousia*), in Aristotle's sense, ontological uniqueness is constituted in terms of differential effects of environment in relation to the different locations in space/time and through the differential affects exacted as a consequence of time irreversibility.

Complexity theory also enables a theorisation of contingency in history in terms of which the scope or expansiveness of what we mean by the good, concerning the domain of core values like liberty, could undergo alteration. Nothing could be more evident than at the start of the twenty-first century with the emergence of new global issues around climate change, overpopulation, nuclear power, terrorism, or viral pandemics, that the state's role is once again necessarily being altered. Contingent changes are altering the calculus of individual versus group interests in terms of which state actions and global agencies act. In this sense, climate change, or uncontrolled population growth, constitute veritable 'tragedies of the commons', as Hardin (1968) claims, indicating the interconnectedness between the collective and the individual. For Hardin, because of the rational pursuit of self-interest, both nations and individuals, are led to over-exploit and therefore abuse the commons, with the result that 'the freedom of the commons brings ruin to all' (1968: 1243). Yet, this would

entail that the greater the problems of security facing communities, or humanity, the greater the level of *shared* relative to *individual* interests, and the greater the shadow of the future over contemporary events. It would suggest that in relation to issues such as climate change or terrorism the emergence of new shared concerns or strengthening of existing ones. For, as danger in the outside world increases, the calculus of what constitutes self-interest (for an individual or group), and what constitutes the 'common interest' (of a group or nation, or humanity) also changes.

For the intertwined nature of these global issues means—increasingly—that the conditions for the development of *each* presupposes the maintenance of adequate conditions for development for *all*. The dual theorisation of macro and micro levels, or system and part(s) as well as the principle of non-reductionism from one to the other, necessitates an understanding of structural supports to individual development, as well as minimising the disaffections of sub-units within the whole, as a necessary requirement for the development of each. Continuance is thus both individual and systemic and necessitates a conception of both shared as well as private ends, with appropriate normative values for each level. In a nutshell, because complexity highlights uncertainty, unpredictability, entropy and accident, and increasing inequality, it would seem reasonable to infer that state and global structures are necessary to regulate and coordinate to ensure shared interests and needs are safeguarded or provided for.

Complexity also explains how systems generate new patterns of activity through dynamic interactions over time, thus facilitating a readier appreciation of the *constructed* nature of the good, and of its periodic reformulation and change in history.[34] By eschewing essentialism, the good is not seen teleologically as a destiny of nature, or in terms of static ahistorical foundations—whether *Forms*, *Cogito* or *Nature*—but rather as a contingently ordered constellation that expresses human interests and concerns in history. After the linguistic turn, the constructed good is subject to indefinite change and re-formulation, as contingent developments in history will force new elements to be differentially weighted or balanced according to actual changes in the real conditions of existence. This is the sort of conception that Michel Foucault advances in his interview with Michael Bess in 1980:

> What is good is something that comes through innovation. The Good does not exist … in an a-temporal sky, with people who would be like Astrologers of the Good, whose job it is to determine what is the favorable nature of the stars. The good is defined by us, it is practiced, it is invented. And this is a collective work (Foucault 2014: 9).

In this model, human actions in history are normative and goal-orientated, but not subject to intelligent design, 'purposeful', or determined by nature or God.

One implication of complexity in nature and society is that priority is placed on political regulation as a positive state mechanism for the management and coordination of matters of urgency, economic failure, as well as for the provision of structures, services, and opportunities, for upcoming generations of citizens. Because systems have their own problems of steering independently of the parts, independent political coordination at the level of the system or collective is *required*. Old ideas based upon economic 'self-regulation', 'equilibrium', or 'laissez-faire', sit uncomfortably

with complexity's emphasis on uncertainty, disequilibrium, indeterminism, unpredictability, and random independent systems dysfunctions. By emphasizing system imperatives in relation to sensitive dependence on context, bifurcation, unforeseen developments, and unintended consequences, an emphasis is placed on the *necessity of coordination* at both the state and global levels to manage the shared concerns of citizens. The corollary of this is the need for a *constructed ethic of the good* which guides both collective politics and individual ethics.

By reintroducing a conception of the good, we can also resolve a major antimony of liberal theorising on the issue of freedom. For unless freedom and choice are structured by a theory of value, i.e. of public good, through which the shared choices of individuals are normatively anchored and given direction, then a purely negative conception of freedom, which is indistinguishable from *licence*, will result. If freedom is defined purely according to the subjective preferences of individuals, then the liberal must celebrate and tolerate *any* choices, including any individual who might define their life mission trivially, by counting blades of grass on the village lawn (Hallowell 1963), or by playing push-pin, or exercising some similar trivial preference, as Jeremy Bentham endorsed.[35] For classical liberals, lacking any theory of the public character of meaning, have no standard by which choices can be evaluated and ranked, or given meaning independent of an individual's preferences. In *Utilitarianism*, Mill (1910: 7–9) seriously called his own liberal credentials into question when he criticised Bentham by distinguishing 'higher' from 'lower' pleasures.[36] Green picked up on Mill's lead and defined a robust conception of good as necessary to freedom. Only if freedom is seen, as Green (1888: 371–372) argued, as the ability of an individual to choose between different *worthwhile* ends can a meaningful conception of freedom as a public good be salvaged.[37] And if only worthwhile freedoms are encouraged, then what is worthwhile must be determined according to good, i.e., to a meta-conception of value which is irreducibly normative and which promotes or inhibits life continuance for each and all.

On this basis, it can be argued that liberals like Rawls, who claim to be consistent anti-perfectionists, fail to sustain their conceptions without themselves assuming a general conception of what a good life is. As Martha Nussbaum argues, Rawls cannot develop an account of important life resources like education and heath as 'primary goods' without himself relying upon a comprehensive moral conception of good which takes 'some stand about what functions are constitutive of human good living' (1988: 152). Such a good is 'comprehensive' in the sense that the state cannot be entirely neutral between all social groups or values.[38] It would need to emphasis certain values and skills as important, values such as tolerance, trust, respect for diversity, and civic institutions, and re-order the importance and priority of particular values (stability vs. liberty) at different times relative to the circumstances that pertain.

In *Capitalism, Socialism, and Democracy*, Schumpeter (1976) says that while we must reject the classical conception of good of old, as a particular representation of the will of the people, in that it reads purposes and ends into nature, there is nothing to 'debar us from trying to build up another and more realistic one' (252–253). Despite his antagonism towards the classical doctrines of good, Schumpeter sees nothing

amiss with representing shared human interests in history as common interests, by which he means 'not a genuine, but a manufactured will. And often this artifact is all that in reality corresponds to the *volonté générale* of the classical doctrine.' (263) Schumpeter continues, '[s]o far as this is so, the will of the people is the product and not the motive power of the political process' (263). Here, Schumpeter is accepting what an adequate conception today in fact requires: the good represents not a mysterious soul, or spiritual or motivating force within nature, but is rather the necessary product of historical social process as individuals and groups seek to actualize the collective agency that is necessary to the realization of their *shared* interests qua individuals and groups. As Gerhard Colm argues:

> One might say that an essential condition for the existence of a democracy is some degree of common conviction that certain achievements serve the variety of ultimate values. In other words, the public interest is the life hypothesis of a pluralistic society – enabling people with different religions, different philosophical convictions, or different subconscious value systems to have a common ground for promoting their various ultimate values. Without this common ground, representing more than an accidental coincidence of individual interests, a pluralistic democracy could not exist (1960: 300).

In the language of complexity science, influenced by quantum theories, it is quite conceivable that such a good can be articulated as a set of probabilities. Although liberalism demonised the concept of the collective throughout the twentieth century, seeing anything but a negative conception of the state's role as invariably leading to totalitarianism, it is vital today to resurrect *a legitimate conception of the concept of collective*, *and articulate an adequate and necessary sense of its use* (see Morss 2016). Again, Colm has a perspective:

> It is a misunderstanding … to contend that the concept of the public interest presupposes a totalitarian philosophy. Totalitarianism refers to the manner in which decisions are made in a society. What is to be regarded as the public interest can be determined in a dictatorial manner, or it can result from democratic processes (1960: 301).

It is this more 'worldly' conception of the good life, not as a metaphysical destiny or telos, nor as part of the world of objective and eternal Forms, but as a general but objective set of developmental values concerned with human good living, incorporating both survival and well-being of all, that a new complexity-based conception of the good with its undergirding values of interconnectedness, entanglement, and insufficiency supports. The good thus takes on a distinctly sociological character concerned with articulating the politically necessary values and practices that ensure the continuation of the project of life into the future.[39]

Such a good, also, is not contradicted by a postulate of self-interest, contra Schumpeter, Buchanan, and the neoliberals, when they maintained that the public good functioned solely as a 'cloak' to disguise the self-interested opportunism of bureaucrats. While many would argue that Buchanan importantly drew attention for the need for systems of monitoring and accountability, the fact that individuals will act opportunistically does not logically displace or exclude the idea of the public good.[40] This is to say, the two concepts are not in fact mutually exclusive. Indeed, it is the good that regulates and moderates individual and group self-interest and behavior

both in terms of law and ethics. This was David Hume's view. In his *Political Writings*, while recognizing the significance of self-interest, unlike Buchanan, Hume sees it not as disqualifying the idea of public good, but rather as quite compatible with it. As he says: '[b]y this interest we must govern him, and, by means of it, make him, notwithstanding his insatiable avarice and ambition, co-operate to public good' (Hume 1994: 113).

Complexity theories of science and poststructuralism put the good firmly back on the agenda. They do this firstly through adherence to a social and historical constructionist conception of the subject, and of meaning, by which the sources of all values are public and social. Secondly, by placing a greater emphasis upon systems, connectedness, interactions, interdependencies, insufficiencies and vulnerabilities.

Thomas Hill Green and the Democratic Justification for Public Good

The writings of the nineteenth century idealist philosopher, Thomas Hill Green, can assist my quest to develop a normative conception of good. Although Green's conception of the common good was unsatisfactory on several grounds, I will suggest that any such weaknesses within Green's theory can be offset by a dose of poststructuralism, i.e., a rethinking of the issues utilizing insights drawn from poststructural social and political philosophy, including complexity science, as it has developed from the start of the twentieth century.

Green's writing is frequently seen as informed by Idealism, and especially G. W. F. Hegel's version of that doctrine,[41] on the grounds that he postulates an inner unity between individual conscious reason and its collective societal development. As Green's student and friend, R. L. Nettleship tells us in his *Memoir of T. H. Green* (1906), 'Green argues for the most utilitarian of political schools on idealist principles' (17). Following 'Wordsworth, Carlyle, Maurice, and probably Fichte' (25), Green 'found [in them] the congenial idea of a divine life or spirit pervading the world, making nature intelligible, giving unity to history, embodying itself in states and churches, and inspiring individual men of genius' (25–26). For Green, says Nettleship, 'human intelligence is God realizing himself in the particularities of nature and man's moral life' (51). Mind is thus 'the self-development of an eternal spirit' (25). Rather than posit a distinction 'between consciousness and its unknown opposite', Green posits a distinction 'between a less and a more complete consciousness' (112). As Green expresses it, the belief in an ideal reality is 'not the admission of an ideal world of guess and aspiration alongside of the empirical, but the recognition of the empirical itself as ideal'. This in turn, 'transmits, not to an analysis of what is beyond experience, but to analysis of what is within it' (Green 1885: 179 & 449). In enunciating the 'principles of political obligation' Green's conception can be criticised in that it is too state-centric, and insufficiently adapted to the global age. His attachment to the philosophy of Hegel constituted a serious obstacle

because it invokes teleological ideas of dialectical progression in history, as well as religious ideas of Perfectionism and divine providence, which generally contradict the postulates of modernist science.

While Green's Hegelianism is therefore problematic, many of his social democratic insights can be reformulated in non-idealist terms; terms quite compatible with the newly emergent conceptions of science from the start of the twentieth century. It is in this sense that Green's specific arguments for a common good appear both sensible and plausible independently of his metaphysical beliefs. For Green, it is based on the state acting in its role as trustee that the obedience of citizens can be secured. The state for Green is necessary to secure the tasks that citizens are unable to complete as individuals. The state must perform these tasks on practical grounds, for there are some collective matters which individuals are not able to do for themselves. For Green, citizens' obligations are dependent upon the state's pursuit of the common good.[42] As the state's capacity is greater than individual's capacity to coordinate, act, and acquire knowledge on a vast array of issues (e.g., natural disaster, health, nutrition, education, planning, the establishment of opportunities, etc.), then the state is best equipped to act for the public good. 'Obligation arises', says Green, 'from the lack of sufficiency of each individual acting alone' (1941: §54). By such a statement, Green opposes the doctrines of exclusive egoism and self-dependence as characterised the mainstay of the liberal tradition.

Green also enables a conceptualisation of the common good in conformity to representative models of democracy thus avoiding problems associated with Rousseau's location of sovereignty in the general will.[43] Here Green makes it clear that he opposes Rousseau. Although Rousseau no doubt intended to salvage a genuine sovereignty of the citizenry, the ambiguity created through the transference of sovereignty to the general will makes Rousseau's formulation unsuitable to ground a theoretical argument for the public good.[44] 'Is there any truth in speaking of sovereignty *de jure* founded upon the *volonté générale*?' asks Green (1941: §95). No, he responds, because sovereignty must reside in a determinate relation between leaders and led. In this, Green agrees with liberal writers influenced by Austin who recognised sovereignty as only legitimately residing in 'a determinate person or persons' (Green 1941: § 83). 'The *volonté générale*, on the other hand, it would seem, cannot be identified with the will of any determinate person or persons; it can indeed, according to Rousseau, only be expressed by a vote of the whole body of subject citizens' (§83). Green concludes that given 'the term sovereign having acquired [Austin's meaning], Rousseau was misleading his readers when he ascribed sovereignty to the general will' (§85).

For Green, then, it is ultimately the democratic process that safeguards individuals and communities against the public good. As he notes, 'there is an ultimate sovereignty of the people' (1941: §59); 'the power placed in the state constitutes a fiduciary trust placed in [it]' (§151); for there can be no 'right divine to govern wrong' (§63). He continues, 'if [the State] ceases to serve this function, it loses the claim on our obedience' (§62). Green's collectivism is thus democratically safeguarded, and individual rights are not occluded by a conception of good. State legitimacy, in turn,

requires and depends, not an act of consent, but some standard or rule of right, indirectly derived from the good, but not reducible to it (§115). Such a 'standard of right' should be 'recognised as equally valid for and by the person making the demand and others who form a society with him' (§ 115). 'Such a recognised standard in turn implies institutions for the regulation of men's dealing with each other' (§ 115). It is this 'rule of right…to which the law ought to conform' (§ 137).

Green is also sensitive to potential conflicts between individuals and collective power and resolves such conflicts through the democratic process. If an individual should disagree with the public good 'he should do all he can by legal methods to get the command cancelled but till it is cancelled he should conform to it…. It is the social duty of the individual to conform and he can have no right…that is against his social duty' (§100). Green sees personal goods as only able to be sacrificed to the common good when such a good can be demonstrated as not necessary to all person's well-being, or when it is not crucial for personal flourishing and the development of each. Clearly the inequality of power between the state and the citizen constitutes a potential source of injustice which Green's theory of democratic government is intended to protect. What is required is a robust conception of democracy which offers genuine protection of citizen/individuals against the state and within civil society. Difficulties that might develop in this relationship between citizens and the state must be dealt with by further 'deepening' democracy.[45]

Deontology and Teleology

If I am to truly rehabilitate the idea of the public good, several of the issues alluded to above need to be addressed more thoroughly. In a recent book, *Can Virtue Make Us Happy? The Art of Living and Morality*, Otfried Höffe maintains not only that the good must be reinstated alongside the right, but that 'teleological and deontological ethics don't have to exclude each other' (2010: 270). Höffe continues:

> [A] primarily deontological ethics allows only for action-internal reflection, whereas a far-reaching teleological ethic also allows for action-external reflection over consequences … ethics is more meaningfully, even necessarily, deontological in its foundation; and in contrast, ethics is teleological with respect to the 'application' of principles to certain regions of life and concrete situations… (Höffe 2010: 270)

Höffe's statement invites the question: in what senses can teleology be reconciled not simply with Kantian deontology, but also with the forms of explanation that characterize science? Aristotelian teleology is a theory of final causes which sees all matter and life as having inherent natural ends and purposes. This in turn developed in the Middle Ages to entail a theory of origins through intelligent design. This conception of teleology was rejected at the Enlightenment where science sought to explain nature mechanically (in terms of basic postulates such as size, matter, shape, motion) without appeal to inherent ends or purposes. After Aristotle, the scholastics sought to restrict teleology to intentional agents, humans or God (see Johnson 2005: Chap. 1).

While Aristotle's conception of teleology as a theory of final causes based on essentialist naturalism was deemed incompatible with science, whether there is a minimal or 'weaker' sense in which a form of teleology can be utilized in re-grounding a conception of good constitutes a meaningful question. For if any sense of teleology is to serve today in rehabilitating a concept of the good on the basis of an immanent normativity in life, it clearly needs to avoid positing occult or religious categories, entelechies or vital spirits, appeals to intelligent design or innate purposes, to perfection, or of being incompatible with science. If the concept of life continuance is open to criticism as marking a retreat to an unacceptable conception of already discredited teleological thinking, as some liberals claim, then, by extension, any attempt to rehabilitate a conception of the public good on that basis will also founder.

In her book *The Virtue Ethics of Hume and Nietzsche*, Christine Swanton notes that Friedrich Nietzsche avoided commitment to what she calls 'strong teleology' of the Aristotelian sort (2015: 196). She records that for Nietzsche, there is 'no telos proper to human beings qua human—rather we create ourselves in an ongoing process …' (196). Nietzsche is an inspiration for the conception of life continuance utilized here to reinstate a conception of the good, as I have previously documented (Olssen 2009: Chap. 2; 2021: Chap. 4). Swanton cites Simon May who says, 'for Nietzsche, unlike Aristotle, the perfect and final actualization of a clear and fixed potential is neither possible nor knowable nor should be sought' (May 1999: 109 cited in Swanton 2015: 197). She also cites Nehemas (2001: 261 cited in Swanton 2015: 197) who asserts much the same thesis, saying that 'becoming does not aim at a final state'.

It is not possible in the space allowable to do full justice to such an issue. What I can say is that a minimal sense of teleology is quite possible which eschews conceptions of 'purposes', 'natural essences', 'inner forces', 'ideals of perfection', and that allows for a conception of goals as an open-ended unending process that applies only to living beings and that is wholly compatible with science. As Koyré (1950/1965) notes, while the doctrine of teleology described a universe that was finite and hierarchically ordered, the change in conception to a universe that is open, indefinite and infinite alters the equation concerning how teleology ought to be configured. With the Enlightenment, such a shift implied a rejection, says Koyré, of all elements from science based on:

> value, perfection, harmony, meaning, and aim, because these concepts, from now on *merely subjective*, cannot have a place in the new ontology. …. Or to put it in different words: all formal and final causes as modes of explanation disappear from – or are rejected by – the new science and are replaced by efficient and even material ones. Only the latter have the right of way and are admitted to existence in the new universe of hypostatized geometry. (Koyré 1950/1965: 7–8)

While major figures such as Bacon (1561–1626), Descartes (1596–1650) and Spinoza (1632–1677) embraced the rejection of final causes, as Johnson (2005: 25) points out, they did not reject such a doctrine 'without qualification'.[46] In addition, says Johnson, 'later prominent scientific revolutionaries, such as Gassendi (1592–1655), Boyle (1627–91), Newton (1642–1727), and Leibniz (1646–1716) actively countenanced final causes, even in the context of natural science' (Johnson 2005: 25).

Many of these figures felt that the early modernists had been too radical and that it was not easily possible to reject final causes, or at least conform in all respects to mechanical method with respect to intentional agency, even if it was possible to conform to mechanism where nature and non-intentional agency was involved. Complexity science has moderated the importance of mechanism supplementing it with emergentist types of analysis characteristic of non-equilibrium physics, implying a shift as Ilya Prigogine puts it, 'from being to becoming' as a consequence of the effects of time irreversibility on the dynamics of large systems, as well as of thermodynamic systems and fields (2003: 39). The inclusion of 'irreversibility' profoundly changes our views of nature, says Prigogine—'the future is no longer given. Our world is a world of continuous "construction" ruled by probabilistic laws and no longer a kind of automation. We are led from a world of "being" to a world of "becoming".' (Prigogine 2003: 39)

It is my view that the Enlightenment 'threw out the baby with the bathwater'.[47] Today, it is necessary to re-incorporate a minimal and revised sense of teleology back into science in order to explain social life and ethics. Schematically, such a proposal would require the arguments and conclusions as follows:

- In that life continuance posits a normativity immanent to life it is fully compatible with a materialistic, scientific forms of explanation of the origins of life. As such, continuance implies no extra-materialistic residue, entelechy, or vital spirit, beyond what can be accounted for by a thesis of scientific materialism.[48]
- Continuance posits no final 'end state', no 'specific goals', no 'terminus', but only 'an end without an end', a process, which is life itself.[49]
- Continuance rejects the concept of 'purposes', which Kant termed *Naturzweck* ('natural purpose' or 'natural end').[50]
- Continuance also posits no standard of perfection; no true self or state of the world which we must aim at.[51]
- Continuance implies no process of design, and no designer. It does not theorize about origins.[52]

Furthermore, an ethics can be constructed which does not read goals into nature:

- There are better and worse ways to continue life. This accounts for law, politics, education, ethics and morality.[53]
- Continuance frames ethics in relation to only three things: (1) one must attend to oneself, (2) avoid harming oneself, others, the world, (3) facilitate and assist ongoing continuance of life as best one can within the life situation one finds oneself in. This goes beyond liberal and social contract ethics in that it recognizes responsibilities to animals, environment, and supererogation.[54]
- Continuance also frames morality: actions which intentionally impede the continuance of each and all are represented as immoral; what facilitates or actively assists continuance norms are represented as moral.[55]
- As a normativity immanent in life, which manifests and expresses itself in each instance of life, and in relation to the common environment which life inhabits, continuance necessarily entails *shared interests, benefits and concerns.* These

constitute the basis for a conception of the common good without denying divergent interests or a democratically agreed framework where liberty can be enacted.[56]

A soft sense of teleology can incorporate a conception of ends and goals as *constructed* and which allows for diversity compatible with continuance:

- Continuance posits only ends and goals which are those of life itself and which can realize themselves variously in an open field of possibilities. These are the ends associated with survival and prospering. Such a notion of teleology is adopted by Theodore R. Schatzki when he says: 'By "teleological" I mean orientated towards ends: the teleological character of activity consists in people performing actions for ends' (2010: xiii).[57] These goals and ends are constructed rather than natural.
- In philosophical terms, such a good is not 'unitary' in the sense that Popper saw Plato, Marx and Hegel. While the good acknowledges shared, i.e., common interests, it also acknowledges divergent ones, which amongst a global polis are likely to be innumerable.[58]
- Continuance norms operate in all living beings, individually and collectively. These do not only refer to intentional agency, as many non-intentional actions impact upon continuance, as do the unintended effects of intentional actions.[59]
- As the state represents the collective or shared dimensions of personhood, in the quest for life continuance, its legitimacy is linked to how well it carries out this function.[60]
- The more dangerous or insecure life is, the greater the significance the collective dimension becomes *vis à vis* individual capacity or autonomy. Issues such as climate change or viral pandemics provide empirical confirmation of such a hypothesis.
- As continuance s premised upon the social-historical nature of the self, normative value is social, and must logically be articulated in a conception of good.
- The tasks required by continuance are experimental, problem-centered and critical. One must overcome obstacles and clear away illusions and mystifications, hence an important role for critical education as essential for democracy.[61]

All of these propositions could be argued for further if time and space permitted. In short, the good can be resurrected because science no longer forbids it, and one is no longer dependant on Hegelian idealism—the dialectical progression of history; the teleological conception of the good; the equation of the real with the rational; or Hegel's religious eschatology.

The Good of Continuance

The concept of life continuance enables us to express this good as an objective dimension. As it is assumed that all people will support that the project of humanity should be continued, i.e., that life is worthwhile, this postulation of an imminent

normativity meets the conditions of the unanimity rule. It may be the only postulation that can be unanimously agreed upon by all, but indeed, it is enough, as all other matters can in theory be resolved via a political process.[62] As it would quickly be decided that democracy offered the best chances of success at continuance, being the only method that would prevent 'a war of all against all', all others matters would be resolved via democratic processes. This would include the shape and character of the democratic process itself.

Such a good can also be justified as self-evident by philosophical analysis through reasoned argument, however. As von Wright tells us in *Norm and Action*, '[o]ne sense in which a norm can be said to be valid is that it *exists*' (1963b: 195). The norm of life continuance can be validated empirically through reflection for humans and for all living beings. From tying one's shoe laces, to 'grasping' and 'sucking' reflexes that new infants manifest, beyond saying that it constitutes the background habitus to our lives far more than we ordinarily acknowledge or possibly are aware of, it is also too obviously true on serious reflection as to warrant further argument for such a thesis here.

Once objectified as a principle however, life continuance enables us to understand the bases to our ethical and moral actions, not as emanation from an objectively existing external world of Forms, but, like the proverbial donkey who pursues a carrot dangling in front of her eyes but attached to a wire around her neck, as immanent within life itself. It generates irreducible normative truths. The mathematical problem in this sense has something of the form of a rational choice game: a certain number of living beings occupying a finite territory with finite resources and inhabiting an environment with a certain capacity to support them. Under such circumstances, with enough information, the good can be 'calculated'. What such calculations will show, I am confident, is that among the surest policies to continue life will include the following goods: clean air, clean water, a form of sustenance that is secure, a cultural ethos of trust, a public education system, and a disputes resolution process that is democratic (to minimize ressentiment and inhibit a 'war of all against all'). These would offer the *best* chances for survival. While such a good is not derived directly through aggregative individual interests, preferences, or wants, it does meet the terms of unanimity on the one crucial issue, as stated above, and taking that issue at its word, it gives everything else over to the democratic process. What the good of life continuance really does is simply codify or articulate the implicit reasoning behind individual and collective politics as we carry it out in the world on a daily basis.

Unlike Kant's principle of universalization, continuance formulates ethical actions from the contingency of the present. It asks: 'what needs to be done', and in doing so, it can formulate a political agenda of pressing tasks as defined in the context of both time and location. Criteria such as urgency are also considered. While some tasks will reflect the universal conditions of existence, such tasks will be discursively modulated and practically overlaid according to the contextual exigencies of time and space. In the present conjuncture both viral pandemics and climate change will significantly affect the discourses and dynamics of the good in terms of what one

ought to do, what is fair and just, what is more prudent, more sensible, more appropriate, and more beneficial. All these normative aspects derive from the mechanics of continuance conceived as a problem of how humanity can successfully traverse the future. Although this constitutes a non-moral criterion for ethics, morality and normativity, the issues of survival pose practical and normative imperatives which require definite tasks. The future stretches before us as a goal to be achieved and surpassed, which paradoxically articulates itself as a series of moral obligations as well as appropriate and prudent normative actions; this is to say, *that the future translates as an imperative for specific actions and specific conducts.* The existence of viral pandemics and climate change elevate the importance of the collective dimensions of personhood and signal a whole new orientation to politics, to personal and group comportment, to the central importance of knowledge and expertise, as well as to the constructions of subjectivity, of space, of time, and of social distance, and the normative basis of both individual and collective interactions and conduct. The new norms of appropriateness themselves will define a new basis for both ethics and morality.

If we act on the provision that rights operate as important protections for individuals against the collective, and that duties or obligations cannot simply or easily be traded for the sake of supposed better consequences in the future, or some conception of the greater good, then we must reject theoretically the emphasis that utilitarianism has traditionally placed upon 'maximisation'. Neither 'maximization' or 'the majority principle' are adequate to ground normative theory. Majority preferences are not relevant to defending minority religious rights, or any other minority group, for instance. To articulate the good in terms of what is necessary to survival and well-being is not something that one seeks to 'maximise' on behalf of the 'greatest number'. Rules of right are themselves sacrosanct for all because they ensure orderly conduct and fair play, i.e., justice, without which the goods of stability and security, plus much else, would all collapse. They cannot be traded in any easy sense.[63]

Compared to Bentham's 'felicific calculus', set out in his *Introduction to the Principles of Morals and Legislation* (1960), the means of calculating the value of an action for continuance ethics is not the over-simplified method of Bentham's model of utility. Partly, the value of an action will be contingently related to time and place. In times of urgency, such as the present time of a global viral pandemic, when life continuance itself is threatened, the collective dimensions of selfhood will assume greater importance, and individual freedom will be constrained. In that the continuance calculus avoids the 'maximizing' strategy, it also avoids the 'averaging' character of utilitarianism. Proof-bearing propositions and strategies, following complexity science, are those that are most probable to achieve success. This is to say, a society where people are treated justly is most likely to succeed. Agendas which respect the mutual dependence of 'each and all' are more likely to succeed, at least in public policy terms. As regards the calculus of continuance, no actions are prohibited unless they impede or are detrimental for continuance itself. Actions which harm others, or harm oneself, or harm social structures are prohibited or discouraged. Continuance is thus a political ethic and form of public morality and thus gives a greater weight to outcomes and consequences than would be the case in respect of purely

private moral matters. Its locus is in an important sense institutional. Continuance is in this sense consequentialist but not utilitarian. It values welfare, security, liberty and individuality, non-domination, as well as reasonable equality as constituting the conditions most likely to succeed for moving forward.[64] Except in times of crisis or urgency, rather than being concerned to promote the *best* policy, it seeks to establish limits and set boundaries. As opposed to utilitarianism, as Nagel says, '[where] the method of combination is basically majoritarian', and policy is enacted 'from a general point of view that combines those of *all* individuals', for the ethic of continuance 'something is acceptable from a schematic point of view that represents in essentials the standpoint of each individual' (Nagel 1978: 86). Thus, the specific standpoint of each individual or group from the contingency of their present situation where continuance is assessed in terms of difference and specificity rather than uniformity constitutes a major departure from the universalizing tendencies of both utilitarianism and Kantianism.

The Good and the Right

Behind liberals' suspicions of the priority of good one may see two related concerns as remaining: (a) that the individual will be sacrificed on the altar of the collective, often expressed in terms that there is no basis for imposing values that run contrary to individual preferences; and/or (b) that the means will be sacrificed in order to justify the ends (consequentialism). These objections are often presented against Utilitarianism but can also be directed against Marx or Hegel. Such arguments are maintained, for instance, by Popper, in *The Open Society and Its Enemies* (1962), and by Rawls in *A Theory of Justice* (1971), as noted above. Bernard Williams (1973: Sect. 5) argues similarly that in maintaining an almost complete attachment to the collective goal of aggregate happiness, '[utilitarianism] fails to acknowledge the central importance of liberty for each individual and the ways and means that they define their lives and give them meaning' (see Dworkin 2011: 383, for a similar view). Scanlon considers Williams view as 'pure self-indulgence….Simply to demand freedom from moral requirements in the name of freedom to pursue one's own individual projects is unconvincing.' (1978: 97)

Simply seeking to attack or abolish the good in order to resolve contradictions is not only unconvincing; it is also not a *plausible* option. Regarding the relation between the right and the good, there is a strong argument to suggest that the right presupposes the good if one is not to fall into contradiction. In an ontological sense, this is required if meanings and values are social and historical. It was in order to resolve conundrums that arise within deontological ethics that J. C. Ewing thought that 'Kant's deontological rule requires supplementation [by a conception of good]' (1953: 63).[65] This is because right and wrong presuppose a theory of good which defines what is right and what is wrong in order to establish their content. It will enable us, also, said Ewing, to know how to resolve ethical conflicts when ethical principles of duty conflict.

An earlier attempt at reconciling teleological and deontological ethics can be seen in David Ross's book, *The Right and the Good* (1930). Ross sought to find a compromise between the deontology and consequentialism by stressing the importance of consequences as determining the rightness of an action, whilst rejecting an exclusive emphasis on them. Further, he defended moral duties but rejected the absolute character of them as holding in all times and places. To this end, he introduced the idea of '*prima facie duty*' to 'signify an obligation that only holds subject to not being overridden by a superior obligation' (Ewing 1953: 78). *Prima facie* duties covered situations where there may be a conflict of duties, or where the 'context' or 'situation' rendered what might normally be regarded as a duty, as perverse. An example might be telling a lie in order to protect the whereabouts of Jew being hunted by the Nazis. By acknowledging this, and 'relativizing' the notion of a duty in this way, Ross is, contra Kant, acknowledging the ultimate link between the right and the good or, in other words, the ultimate dependence of the right on the good. Ross's notion of *prima facie* duties can be incorporated, and understood, in the light of continuance ethics, for again, it is continuance that here serves as a meta-ethic to 'regulate' the applicability of principles to actions, resulting in either the abandonment or uptake of the duty concerned.

Although reinstating the good in moral terms reintroduces concerns regarding consequentialism, Ewing would argue that it is no solution to the antimony of liberalism to argue a reductionist case. One face of this concern might postulate a situation where one breaks a promise to achieve some greater good at the time. Deontologists criticised utilitarians on similar grounds for prioritising the outcomes of each action as being what counts, hence they could break a promise if they held that a subsequent action led to a greater good in overall terms. Despite the importance of consequences, rights are not ignored. Scanlon argues for what he calls a 'two-tier' approach 'that gives an important role to consequences in the justification and interpretation of rights, but which takes rights seriously as placing limits on consequentialist reasoning at the level of casuistry' (1978: 94). My own comment to Scanlon here is that such a general principle would require appraisal and judgment in relation to application in each situation. My response in terms of continuance ethics is that while continuance places importance on outcomes and consequences, the value given to rights, actions and rules does not disappear. At the same time, within a systems perspective, a general theory of rights offers protections and entitlements to each in relation to others and to the whole. Approaching the issues in terms of continuance also assists with establishing what consequences are to be considered important. Each situation will require judgment, reflection, and deliberation. If the good represents the shared values of life continuance as a process without closure, the same continuance norms also specify the sanctity of the right with its obligations to tell the truth, not to lie, or steal, as set rules except where a *prima facie* reason can be justified to do otherwise. Rather than such rules being universal, pace Kant, continuance norms regulate actions to grant exceptions in specific situations depending upon contingent circumstances of time and place. Hence, to re-use the example used above, if the Nazi SS guards arrive at your door and ask the whereabouts of the Jew you are harboring, you can lie to him; indeed, morally, *you ought to lie to him.*

A second response here is that where conflicts exist between the good and the right, they cannot be resolved as liberals have tried to do by abolishing the idea of the good. A great deal of liberal objections to the good are simply a method for establishing the exclusive legitimacy of a deontological moral framework. If the right presupposes the good, tensions and conflicts between them can only be resolvable through legal, political and institutional processes, including norms of public scrutiny, transparency and accountability. In political terms, conflicts between the right and the good, like the dangers of collective power, are resolvable when we recall that relations between the right and the good are *political relations.* This is to say that individual rights are ultimately protected through *legal machinery* and through *democratic mechanisms.* Conflicts resulting from a domination by collective power must be resolvable at the political level in terms of dispute resolution mechanisms. Where there are conflicts between individual rights and collective ends, or between duties and consequences, these must be adjudicated through a publicly mandated institutional procedure in terms of public norms of transparency and accountability. In cases of personal morality, where one—say—breaks a promise to achieve a 'greater' good, this may be resolved by 'giving an account of oneself'. In a complex society, structured by contingently varying conflicting situations, the possible types of conflict between rights and duties on the one hand and consequences and ends on the other will be infinite not just in terms of content but also in terms of the application of principles. In this context, the good and the right must be justified in each situation. In cases of conflict, depending upon the situation, one should be able to 'give an account of oneself', demonstrate veracity and sincerity, apologize, file a grievance, or take legal action. This is why a democratic culture is so important, because democracy ensures that both individual and collective rights and entitlements can co-exist, that one is not sacrificed on the altar of the other.[66]

Importantly, in this sense, practical policy formulation proceeds according to the good, but nevertheless we can agree that individual actions must accord with those duties and obligations defined as right. This is because the right represents the rules of engagement which codify the way in which a good life is represented and operationalized for a multiplicity of projects that partake of it at a particular time. There is then a relation between the good and the right, but it is not helpful to attribute any categorical normative priority to one over the other. Rules of right represent the way the good life is operationalized and rendered available for all. In this sense, they regulate *process* which establishes rules of engagement and action. It is in the public spheres of politics, law, and morality, where the good and the right are accommodated, one to the other. Where individuals decide that the 'law is an ass' or 'morality is an ass', as may well happen in a complicated world,[67] should they choose to disregard the right, they should be prepared to publicly demonstrate the legitimacy of their decision (i.e., they should keep the receipts!). It is through collective publicly accountable authority, via democratic processes, law, and personal integrity, which regulates the relation of right to the good, and ultimately saves us from the dangers that some see in 'aggregative' or 'consequential' theorizing.

Education as a Public Good

So far, I have suggested that liberalism cannot abolish the good without falling into contradiction. The good, I have suggested, is necessary to both ethics and politics in a global age. The norms of continuance generate a unitary scheme of moral concepts and actions which ought to guide every individual in different times and places. Although unitary, such a scheme permits a multiplicity of different ways of life and is quite compatible with pluralism within limits.[68] Values such as trust and respect for norms of civility endlessly differentiate within discourse and yet retain a common core with definite limits. Trust, like clean air, is in the interests of all, and facilitates continuance. Trust presupposes a social context of civility and involves counting on, and being counted on, by others. To seek to abolish the good results in a dangerous individualism which stands opposed to, or fails to recognise that individuals have both solitary and shared dimensions to their development and identities, a shared dimension which necessitates both institutional and collective politics, which in turn requires increasing regulation and positive political (state and global) action in an increasingly dangerous and uncertain world. To put it starkly, without recognition of this collective dimension of personhood, individuals themselves will perish. While democracy presupposes a conception of individual liberty, liberty in turn presupposes and can be guaranteed by effective economic and political action.

In representing the good in terms of what is necessary for the survival of life, policy will not be formulated in relation to 'idealistic utopias', or the 'perfectibility of man',[69] but rather based on *sustainability* and sensible forward planning. Such a non-metaphysical good shows affinity with Brian Barry's conception of the public interest, as well as with Hannah Arendt's conception of public life. Barry (1990) considers a public good as constituting something that benefits all members of a community in an abstract or general sense in their capacity *as citizens*. A public interest is defined as 'those interests which people have in common *qua* members of the public' (190) (italics from the original). He cites George Cornewall Lewis, from his book *Political Terms*, who defines public as opposed to private interests as 'that which has no immediate relation to any specified person or persons, *but may directly concern any member or members of the community, without distinction*' (cited in Barry 1990: 190) (emphasis added). Barry then cites Jeremy Bentham who in 'Principles of the Penal Code' defines 'public offences' as:

> Those which produce some common dangers to all members of the state, or to an *indefinite number of non-assignable individuals* although it does not appear that they are in particular more likely to suffer than any other. (Bentham 1931: 240 cited in Barry 1990: 190) (emphasis added)

On this definition the public good affects everyone equally, not necessarily in any actual situation, but *potentially*. These constitute shared interests; which Barry defines as 'interests in common to all members of a community' (207). In Barry's view, the public interest can be promoted in two senses. The first is negative by prohibiting things such as the erection of 'flashing neon lights in the Cotswolds' (208). The second is positive, such as the 'erection of parks and benches, roads, etc. such

as might be constructed by a local community' (208). What is clear here is that the public good includes all those values—security, stability, liberty, contentment—for the project of humanity and life itself to continue onwards into the future.

We can also appreciate here, as many of their critics did, that common sense derived from ordinary lived experience did expose flaws in the liberal social contract theorists' arguments, even on their own terms. The fact is that governments, as well as social organisations, like schools, *do* make and enact policies; if not in the public interest, in whose interests do they act? Under what conditions can a government take collective action? Politicians and media frequently invoke the public good to describe what they do (see Held 1970: 9–11). Most people would find it perfectly acceptable if we say that a high standard of nutrition for citizens is *in* the public interest. Similarly, most would find it acceptable if we say that clean air is a public good. While there is lots of analytic scope for balancing the public interest against special interests, or seeking to ascertain which interests are common to all members of the public, or splitting hairs over border-line cases, the orientating conception adopted in this paper is that certain policies, goods and benefits, are in the interests of all members of the community, that is, for *anyone*.[70] In Britain, the National Health Service fits this conception, in that it is in everyone's interest, especially as no one can precisely predict their own needs in this respect. The state's regulation in respect to land or property development is also typically deemed to be for the public good.

The appeal to complexity theory stated here, influenced as it is by systems theory and poststructuralism, sees the interests of individuals and society are entwined 'through and through' and, in this sense, sees individuals as public beings 'through and through'. As Arendt (2000) says, the public realm represents a 'common world' which 'gathers us together and yet prevents our falling over each other' (201). The word public, she says, signifies the world itself, insofar as it is common to all of us, is distinguished from the 'privately owned place in it' (201). The public realm, then, constitutes 'a transcendence into a potential earthly immortality' whereby without it, 'no politics, strictly speaking, no common world and no public realm, is possible' (202). As for Kant, then, for Arendt, the objective foundation of the shared public interest, which constitutes the foundation for denoting its normative, political, ethical and moral imperatives, operates under the rubric of a 'good' (i.e., *the Public Good*), which arises 'by virtue of the right of common possession of the surface of the earth' (Kant 1994[1795], AK 8: 358), constitutive of a world with *finite and limited resources which are shared together*. For, 'under the condition of a common world…everybody is always concerned with the same object' (Arendt 2000: 205). Ultimately, then, it is the indisputable materiality of this shared common concern that grounds the argument for the reinstatement of good.

Education constitutes such a public good *par excellence*, as education is an interest shared by all. Education also influences the ability of both individuals and societies to continue life and achieve well-being. Knowledge in this sense is a shared public good. Only public action can guarantee the development of the knowledge necessary to overcoming obstacles, providing security and expertise for the future. Education should be publicly provided, as well as secular, compulsory and free. In an increasingly unstable, crowded and dangerous world, it is especially important that

major institutions serve the global common good rather than as a vehicle to promote individual or class aspirations. Knowledge socialism, where education and training, skills and knowledge, are all freely accessible and transparent, constitutes an essential prerequisite for the pooling of resources and the tackling of global problems that today constitute our shared destiny.

The reinstatement of the good is justified on the basis of shared interests and public benefits thereby circumventing the traditional criticisms of the classical liberals against ideas of the good. Those who defend the concept of the public good now also find that their arguments can more easily be justified according to the precepts and axions of science as reconceptualised after the turn of the twentieth century. This is because the new science constituted not just a revision of the classical synthesis, but a revolution. Instead of being individualist and reductionist, the new science stressed interconnectedness, systems, and non-reductionism, effectively reconfiguring the relations between the one and the many to emphasise both the collective as well as individual dimensions of life, both which now require articulation. Because complexity approaches to science also stress concepts such as insufficiency, uncertainty, non-predictability, the unintended consequences of actions, as well as random and chance events, the importance of state agency and collective power in the service of protecting and supporting citizens is emphasised. Contemporary models of science today fully justify that selfhood has a collective dimension which requires collective action proportionate to the dangers in the environment, and constrainable by democratic means. Indeed, without an adequate conception of the collective and, by extension, the good, concepts like the 'individual' and 'liberty' cannot be understood. Once the collective dimension of selfhood is acknowledged, liberal attacks of the idea of the good become obsolete.

Notes

1. Cassinelli (1958), Benn and Peters (1959), Musgrave (1959), Benn (1960), Colm (1960), Hart (1961), Cohen (1962), Friedrich (1962), Rees (1964), Flathman (1966), Held (1970), Benditt (1973), Cochran (1974), Barry (1964, 1990), Pitkin (1981), Lewin (1991), Bobbio (2000), Campbell and Marshall (2002), Bozeman (2007), Meyerson (2007), and Johnson (2017) to name just some.
2. Although influenced by poststructuralism, I have read across both Continental as well as the Anglo-American philosophy. Scanlon has influenced me from the latter group, in terms of interests and consequences, and concerning the irreducibility of normative truths, but not in terms of his adherence to the social contract tradition, his conception of rationality, or concerning the subject.
3. See Sen (1982), Weale (1983). Philosophers such as Scanlon (1978), Harsanyi (1976), and Hart (1963: 25–34; 1966: 58–63) have also distinguished the need to consider 'objective' as well as 'subjective' preferences, thus supporting forms of paternalism.
4. Quantum mechanics displays the same themes of other complexity approaches, viz. connectedness, systems analysis, indeterminism, but has had less influence on my own thought for various reasons. One is the differences existing

between different accounts of quantum theory, between the early developers of the theory, as well as between interpreters of the theory. It is not clear, for instance, whether the thesis of 'uncertainty', proposed by Heisenberg, is an epistemological, methodological, or ontological thesis; that is, whether it is a thesis concerning 'ignorance', or one of 'radical indeterminacy'. Secondly, on one interpretation, as a form of 'mechanics', quantum theory must still be seen as 'deterministic' in ways that Poincaré's work, and Prigogine's work later in the century, surpassed. Thirdly, I tend to agree with much of Einstein's criticisms of quantum theory, in his initial debate with Niels Bohr, and later in the mid-thirties in his famous paper with Podolsky and Rosen, concerning the 'incompleteness' of quantum theory (see Einstein et al. 1935). For these reasons, quantum theory, although a background influence in that the main drift of its perspective fits the complexity model, has less direct influence on my own representation of complexity, which draws most directly on Poincaré and Prigogine both in terms of science and philosophy of science (on quantum theory, see Gribbon 1998; Polkinghorne 1990).

5. Poincaré's resolution of the 'three body problem' established him as the father of chaos theory in that it defeated arguments for linear determinism, certainty, predictability, and closure in science. Also, of importance, Poincaré introduction of the topological model for physics and mathematics indirectly re-establishes the centrality of holism and systems thinking in ontology for both the physical and non-physical sciences (see Poincare 1890, 1891, 1902, 1908, 1911, 1913, 2017; Duplantier et al. 2010; Pomian 1990; Rae 2004; Skiadas 2018; Worrall 1989).

6. Einstein's four seminal papers of 1905 in the German scientific journal *Annalen der Physik* can be seen as marking the death nell of the Classical paradigm that would forever change physics and the elementary forces that constitute it: electromagnetism, space/time, and their interrelations.

7. Badiou's slim volume on ethics, written in the summer of 1993, in the space of two weeks, is intended by him, as he says, 'as no more than a preliminary sketch' (2001: lvi). Further discussion of his work and its parallels to my own postmodern ethics of continuance, which I developed before coming across his volume, is taken up in my book (Olssen 2021).

8. See Guidi (2008), Singer (1993).

9. Anglo-American philosophy and poststructuralism utilize a similar conception of constructivism, due to its common ancestry in Kant. It includes a sense of normative discourse as constructed in history operating under certain specified conditions, from which principles of practice can be justified. Wedgwood (2007) argues that all action governed by rational beliefs is normative and orientated to an end or goal (especially, Chap. 7: 'The Normativity of the Intentional'). Also see Ginsborg (2015), Scanlon (2014), and Weale (2020: Chap. 3). Scanlon argues 'that a constructivist account of the normative domain is appealing because it seems to offer a way of explaining how normative judgments can have determinate truth values that are independent of us while also providing a

basis for our epistemological access to these truths and an explanation of their practical significance for us.' (2014: 91)

10. See Olssen (2009: Chap. 6) for a detailed outline.

11. See Simons (1948).

12. See Buchanan (1954a, 1954b) and Arrow (1950, 1951).

13. See Niskanen (1971); Downs (1957, 1962, 1967); Olson (1965); Tullock (1965).

14. Deontology derives from the Greek word *déon* which translates as obligation or duty, or in terms of 'what is binding', or 'proper'. In reference to the study of normative ethics it referred for Kant to fact that moral actions should be based on strict rules (never lie, never steal, etc.) rather than consequences. Although the other terms used here will be explained further below, good based theories, such as Aristotle's posit an end or telos (happiness or *eudaimonia*) to which all action aspires.

15. Schubert says that 'there is no public-interest theory worthy of the name' and he rejects that there ought to be such a theory (1960: 223–4).

16. Although I won't defend paternalism in this paper, given this resolution to the classical utilitarian focus on preferences, paternalism could be defended. In this sense, H. L. A. Hart's statement that: 'paternalism—the protection of people against themselves—is a perfectly coherent policy' adds a further reason that builds towards a socially responsible democratic policy that enables the state to act for and on behalf of individuals in times of need.

17. See Rae (1975), Coleman (1989), Barry (1990), Shapiro (1990: 79–125), Nelson (2010), Weale (2020: Chap. 6). All of these authors raise serious criticisms of the unanimity principle.

18. In *The Calculus of Consent*, Buchanan and Tullock note the likelihood that the unanimity rule may not actually apply for any real-world decisions, and also acknowledge that unanimity may be costly and difficult to achieve (1962: 69).

19. While it claims to be merely aggregational, and non-normative, as Shapiro (1990) says, the model actually '"distorts" preferences' (94) and 'rests on a misleading theory of action' (92) in that it unjustifiably privileges actions that mimic what the market would produce. In social contract terms, the inference being advanced is that the market replicates the 'original position' of pre-social rational maximisers.

20. Buchanan and Tullock justify it on the grounds that (a) it is the decision-rule that would be chosen by self-interested subjects acting rationally; (b) it is by definition acceptable to all; (c) that such a rule ensures the inviolability of the person; (d) that it is fully inclusive of all individuals. It also (e) mimics consumer preferences in the market and is sensitive to property rights distribution. Hence, they say, 'only if a specific constitutional change can be shown to be in the interests of all parties shall we judge such a change to be an improvement' (1962: 14). Constitutional is defined by them in broad terms including economic issues, taxation, welfare, and property rights issues,

21. Buchanan and Tullock can also be accused of being ambivalent, hence, they say: 'were decision-making costless, rational voters would choose a unanimity rule. Because decision-making is not costless, simple majority is the second-best

solution.' (1962: 215) The issue concerning ambivalence is a fairly standard criticism of Buchanan and Tullock. William Nelson notes, for instance, that in chapter 8 of *The Calculus of Consent*, they proceed to argue 'that something closer to majority rule might be preferable all things considered given the costs of reaching a consensus' (2010: 83). See also Coleman (1989, passim).

22. See Prigogine and Stengers (1984), Nicolis and Prigogine (1989), Kaufmann (1995), Capra (1996), Mitchell (2009).
23. Plank's 'constant' was an important influence upon Einstein.
24. See note 2 above.
25. See note 3 above.
26. See Bohr (1958).
27. See Heisenberg (1959).
28. See Schrödinger (1995).
29. Dirac invented quantum field theory in 1928, providing a unified account of the wave/particle duality without paradox (see Polkinghorne 1984: 2; Dirac 1982).
30. This has included concepts to do with the meaning of 'trajectories' and 'initial conditions'.
31. See Poincaré (1890, 1891, 1902, 1908, 1911, 1913, 2017). Also see Duplantier et al. (2010), Skiadas (2018), and Rae (2004: 108–114, 122) for an overview and pertinent comments concerning Poincaré's contribution.
32. If a film can represent motion running backwards in the same way as running forwards, then it is said in physics that time is reversible. The rotation of the hands of a clock is reversible, whereas tearing a piece of paper is irreversible. Prigogine does not deny that time reversibility has relevance but wishes to add that in many areas time is irreversible.
33. This was also Karl Polanyi's thesis in *The Great Transformation* (1957) when he argues that far from ideologies or ideas being important in the growth of state power in the nineteenth century, it was really a matter of practical necessity.
34. See note 20 above.
35. Bentham had famously said: 'prejudice apart, the game of push-pin is of equal value with the arts and sciences, of music and poetry. If the game of push-pin furnishes more pleasure, it is more valuable than either.' (Bentham 1830: 206). As Alan Ryan says regarding Bentham's position that individual preferences must remain the sole criteria for exercising freedom: 'This is, in Bentham, a necessary truth.' (In Vergara 2011: 9). See Ryan's lecture, 'Moving on from Bentham: Quantity and Quality', Utilitarianism, Third Lecture. http://users.ox.ac.uk/~ajryan/lectures/Utilitarianism/Mill%20Lecture%203.pdf. Accessed 31 May 2020.
36. Mill was defending the thesis that poetry, music and theatre were more worthy pursuits than a trivial game. Because the criteria for making such a judgment must come from outside the individual, Mill is presupposing a conception of external, objective value, i.e., a good.
37. See Green (1888: 371–372).
38. School policies concerning language, the observance of holidays on days of national importance, or religious observances, are not 'neutral', for instance.

39. In saying that the good must take on a sociological character, I do not intend that it is merely 'conventional', for it can meaningfully be asked whether any policy, accepted by social convention, really is *best* for life continuance itself.
40. See my article (Olssen 2018) where I also maintain the thesis concerning the mutual compatibility of selfish individual interests and the public good.
41. Idealism, whether German or British, was influenced by Hegel, and posited the central role of the ideal or the spiritual in the interpretation of experience.
42. Green's views were made in his *Lectures on the Principles of Political Obligation* (1941), first delivered at Oxford University in 1879–80.
43. Rousseau had distinguished the 'General Will' as distinct from and as transcending the 'will of all' which gave it a metaphysical quality and made its link with popular sovereignty problematic.
44. Many writers have claimed this, but see Polin (1969: 9–10), who says that Rousseau's supposition that sovereignty was in constant exercise because 'when an individual has once given himself to the whole, he gives himself through the whole to himself' offered support for a collective sovereignty that legitimated authoritarian rule.
45. The idea that the solutions to the problems of democracy must be resolved by further deepening democracy comes from Dewey (1927). Such an idea is also in the spirit with what Green suggests, however.
46. These mainly concerned the applicability of teleology to intentional or living beings (see Johnson 2005: Chap. 1).
47. I have previously maintained this thesis with respect to psychology. See Olssen (1993, 2014).
48. For a discussion of materialist theories for the origin of life see Simon Conway Morris (1998) and Stephen C. Meyer (2010: Chap. 2). For a discussion of the issue of vitalism, see Georges Canguilhem (1994: Chap. 13). Chapter 13 is titled, 'Knowledge and the Living'. The first section of the chapter is titled 'The Vitalist Imperative'.
49. See Swanton (2015: Chap. 10) for a discussion of these matters in Nietzsche.
50. See Kant, *Critique of Judgement* (1914: §§64–65) for a discussion of 'natural purposes'. See Ginsborg's discussion of Kant's thesis (2015: 317–318).
51. See Swanton (2015: 196–199) for Nietzsche's views in reference to teleology.
52. For a discussion of the issues surrounding the design thesis with reference to Kant, see Ginsborg (2015: 229–237, 250–253, 337–339, 231–232, 237–243, 254–262, 274–278, 321–339, 342–345). For Kant's discussion, see *Critique of Judgement* (1914: §§ 75, 78, 414).
53. While this generates an objectivist criterion, judging from the present, as in complexity science, is inexact and experimental.
54. Duties thus go beyond 'what we owe to each other' (Scanlon 1998). Also see Olssen (2021) for a further discussion of these themes.
55. This insight is Nietzschean. See Swanton (2015), Olssen (2009).
56. Not all interests are common, besides shared interests can be realised or pursued differently (as in nutrition).
57. See Ginsborg (2015). In relation to Aristotle, see Johnson (2005).

58. Olson (1965: 36) says: 'The larger the group, the less it will further its common interests.' In many cases, divergent and common interests will be co-present, and express each other simultaneously at different levels of generality. Thus, while there is a common need for sustenance, individuals and groups diverge on how it is achieved.

59. See Schatzki (2010: 117) for a discussion of intentionality with reference to Donald Davidson's writings on the topic (1980: 3–20).

60. The collective or shared aspects of personhood are centrally what liberal philosophy has omitted to emphasise, except in the truncated senses associated with negative freedom, radically effecting their ontology of the world.

61. 'Problematizations', for Foucault, orientate an approach to the present and operates as a central concept of his research (Foucault 1988: 257). Foucault was indebted to Nietzsche for his activist ontology. Swanton says (2015: 198) that 'overcoming' as an 'active engagement with the world' is also Nietzsche's central thesis. Bernard Reginster says that 'overcoming' is what is central to Nietzsche's concept of the 'Will to Power' (Reginster 2006: 130–132).

62. I claim here that as respects life continuance, unanimity, or very near unanimity, would be possible to infer even if articulated in different ways.

63. In that such rights are not absolute, however, where there is a conflict between right and good, resolution frequently proceeds at the institutional level, in parliament or the courts.

64. Reasonable equality is quite compatible with a mixed economy which recognises wealth and income disparities, rewards for motivation, initiative, effort, dessert and merit. The application of specific policies, such as progressive taxation, may be useful at certain times.

65. Parekh (2005: 22) also undermines the ability of Kant's universalisation rule to stand on its own when he notes that 'it is possible to universalize and consistently will the principle that one should always tell the truth irrespective of its consequences. It is equally possible to will consistently that one should tell the truth unless it causes harm to others. Since the Kantian test is met by both, it does not tell us which one to opt for.'

66. It is for this reason that amongst other things, the state provision of legal aid is essential to liberty and the expression of rights. The curtailment of legal aid under austerity in the UK and other western nations over the last two decades has significantly disadvantaged individual citizens who, except for the wealthy few, lack the resources to effectively redress rights grievances.

67. Wherever duties conflict, some rule in relation to good will need to be appealed to in order to hierarchically rank one over the other. It is also the case that rules of right are not absolute for they derive from the good of continuance. Where a rule becomes nonsensical, direct appeal to life continuance usurps the grounds.

68. Isaiah Berlin believes that 'the ends of men are many … [and] that the belief that some single formula can in principle be found whereby all the diverse ends of men can be harmoniously realized is demonstrably false' (1958: 71). My counter argument to Berlin is that pluralism, to be intelligible, must presuppose limits, so that unacceptable views can be excluded (see Olssen 2010: Chap. 4).

69.   I take this phrase from the title of a book by Passmore (1972).
70.   For discussions of the various analytic uses of the concepts of 'interests' (special interests, group interests) versus 'good' (public good, common good), see Barry (1964, 1990), Benditt (1973), Lewin (1991), Campbell and Marshall (2002).

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Mark Olssen FAcSS, is Emeritus Professor of Political Theory and Education Policy in the Department of Politics at the University of Surrey. His most recent books are *Liberalism, Neoliberalism, Social Democracy: thin communitarian perspectives on political philosophy and education*, Routledge, 2010; *Toward A Global Thin Community: Nietzsche, Foucault, and the Cosmopolitan Commitment*, Paradigm Press, 2009. He is also co-author (with John Codd and

Anne-Marie O'Neill) of *Education Policy: Globalisation, Citizenship, Democracy* (Sage, 2004), and author of *Michel Foucault: Materialism and Education*, Greenwood Press, 1999/Paradigm Press, 2006. He has also published many book chapters and articles in academic journals in Britain, America and in Australasia. Most recently, 'Neoliberalism and Higher Education Today: research, accountability and impact'. *British Journal of Sociology of Education*, *37*(1), 129–148, 2016; 'Exploring Complexity through Literature: Reframing Foucault's research project with hindsight, *Linguistic and Philosophical Investigations*, *16*, 80–89, 2017; 'Neoliberalism & Democracy: A Foucauldian perspective on public choice theory, ordo liberalism and the concept of the public good', in *Sage Handbook on Neoliberalism*. London: Sage Publications, 384–396, 2018; 'Neoliberalism and Laissez-Faire: The retreat from naturalism', *Solsko Polje*, *XXIX*(1–2), 33–56, 2018, and 'Foucault and Neoliberalism: A response to critics and a new resolution', *Materiali Foucaultiani*, V(12–13), 40–60, 2019.

Chapter 10
Going Public: Higher Education and the Democratization of Knowledge

Sharon Rider

The Public Is Not Invited (and Never Has Been)[1]

The notion of 'the public' has seen a shift from the high-modern postwar period of being associated foremost with formal institutions to a more postmodern, less clearly defined array of heterogeneous spheres of social interactions between sectors and individuals. Indeed, the idea of the public has been, in a sense, 'individualized' in terms of contractual arrangements and consumer rights (Novak 2017, 2020). An important element of this individualization has been decentralization and deregulation in the aftermath of the introduction and implementation, since the late 1970s, of market mechanisms into areas, such as education, that were previously seen as public goods (Waluszewski 2017). At the same time, there is a continuing struggle over the conceptualization and constitution of education and its institutions, public and private, that is far from settled (Börjesson 2017; Börjesson and Cea 2020). This tension, however, is hardly new. Our current ideas about the relationship between education, especially higher education, and democratic values and institutions, have been discussed since at least the Enlightenment, when Humboldt sketched his plan for the revitalization of the university on the basis of the liberal principles of autonomy and productivity: the university would now be a place where the community of scholars—students and teachers—would together produce new knowledge for the benefit of humanity, and reproduce solid scientific understanding and sound judgment in the minds of citizens and civil servants, for the good of the state.

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[1]The title of this chapter is borrowed from Tom Wolfe's *The Painted Word* (New York: Bantam 1975), a critique of the insularity of the world of art critics, wealthy collectors and museum curators.

S. Rider (✉)
Department of Philosophy, Uppsala University, Uppsala, Sweden
e-mail: sharon.rider@filosofi.uu.se

This paper concerns the conceptualization of the idea of the public university today, that is, a university that is in state ownership or receives significant public funds through a national or subnational government, as opposed to a private university, regardless of whether the latter is for-profit or non-profit.[2] I will focus primarily on the nexus between the notion of 'the public' and the responsibility that this public aspect is thought to entail, especially given the transformation of public universities and colleges since the 1980s. While I will make reference to historical or present conditions, the emphasis will be on a conceptual analysis of the notion of 'public' as a kind of prolegomenon to further investigation. In the first section, the problematic character of the relationship between the university and the public it is said to serve is laid out in terms of the precarious legitimacy of institutions of higher learning in contemporary calls for radical democratization. In the second section, I analyze, as an exemplary case, the most cogent and nuanced theoretical framework for such a project of which I am aware (Steve Fuller), in light of a Wittgensteinian examination of the public nature of knowledge and its implications. The third section focuses on the sociopolitical economics of knowledge in the broadest sense, while the fourth and final sections introduce a proposal, inspired by Simone Weil, for how we might conceive of the project of radical democratization as knowledge socialism, rather than in terms of individual liberties or group interests.

To start, we should note that there is some ambiguity in the way the term is used. On the one hand, there is the specific sense of the term as defined above. A state-funded or state-owned university is subject to legislation and government directives, the latter increasingly result-oriented and combining appropriations with political objectives. But the discourse of accountability and responsibility accompanying the use of the term public also rides on a number of connotations of the term. The relevant undertones that I have in mind are:

1. Civic, governmental, official: 'the public sector';
2. Influential, important, eminent: 'a public 'figure';
3. Common, communal, shared: 'public affairs';
4. Open, accessible, available: 'a public library';
5. Exposed, in circulation, publicized: 'a public apology';
6. Belonging to citizens, society and/or taxpayers: 'public spending'.

Now, of course, there is a great deal of overlap: A public library, as a rule, is both open to the community *and* financed by the taxpayers, and has as well some sort of formal or official status, in contrast to a private enterprise such as a book store. Nonetheless, it is worthwhile to keep in mind these slightly different senses of the term when holding the public university accountable in various ways. So, for instance, as opposed to a private university, a public university is one that is in state ownership or receives significant public funding through a national or state government. But whether a state university is considered public will depend upon the specific education landscape in the state or country in question.

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[2]The HE-landscape differs between countries, which means that a national university may or may not be considered public, depending upon the system in question.

The aspect of 'public' that I will be addressing here is not in the first instance a matter of ownership (i.e., a matter of legal status and economic structures), that is, I will not be stressing (1) in the list above. Nor will I primarily be discussing issues related to the regional aspect of the university or its de facto global standing or its position with regard to the local community (2). Rather, at the intersection of (3)–(6) above, I am concerned with the idea of an institution that, by its very nature, involves something that, in principle if not in fact, belongs to *everyone* (6), and therefore, in a very particular sense, *anyone*, i.e., (3)—whether or not the institution in question is financed from the state coffers. One of my main arguments is that a proper understanding of this idea requires some reflection on what it means for such an institution to be 'open' (4) and 'public' in the sense of 'exposed' (5). Thus, the topic of this paper is not the public university as a reality, an agenda, a project or a prescription. Rather, I will consider the modern university as the formal and material institutionalization of an idea that incurs a very particular sort of social responsibility.

Leaving aside the legal and economic aspects of institutionalization aside, one might ask what kind of institution a public university is in terms of its ultimate purpose, its distinctive characteristic as an institution open to anyone (4), something shared (3), exposed (5) and belonging to all (6). One suggestion that has been proposed, and which I will discuss at some length in this chapter, is that the main purpose of the university as such (and, I infer, all the more so of one that is characterized as 'public') is the democratization of knowledge. Most notably, Steve Fuller has called for the university to

> relaunch its Enlightenment vision by stop privileging research activity, which arguably lays the groundwork for rent-seeking through priority claims made in the scholarly literature and the patent office. The academic capacity for countering expertization is expressed in the classroom, as teaching provides access to knowledge to those who otherwise would not acquire it because they have not been part of the contexts in which such knowledge is produced and distributed. Thus universities manufacture knowledge as a public good through the creative destruction of the social capital formed by research networks. (Fuller 2018a: 2)

In *Post-Truth*, Fuller not only rejects the production and maintenance of expertise as the *raison d'être* of the university, but also levels a sustained argument against the academy and its allied institutions as a kind of epistemic protection racket. He contends that on the basis of the sort of knowledge that a scientific consensus (allegedly) bestows, what Kuhn called 'normal science', 'universities can extract the form of rent known as "tuition," in return for which "credentials" are dispensed' (Fuller 2018a: 185).

Fuller is critical of the notion, increasingly embraced by politicians, professionals and the intelligentsia, that we are today witnessing a popular revolt against expertise waged by anti-intellectuals who privilege ignorance over knowledge and treat all ideas and opinions as equally valid and worthy of consideration. This picture, Fuller says, is a 'big canard'. To the contrary, he suggests, leaving important matters to the 'experts' to decide encourages a blind trust in authority that weakens the scaffolding of democratic institutions, which depend on the active exercise of judgment

to flourish.[3] Our 'culture of intellectual deference', as he calls it, is actually counter-Enlightenment (Fuller 2018a: 13). Fuller emphasizes repeatedly that being prepared to take responsibility for our own ideas and actions and to acknowledge ownership of their consequences is a matter of ethics, not epistemology. Rather than see the debate as being between the cognoscenti, on the one hand, and an unruly mob, on the other, Fuller portrays the struggle as one between two forms for political discussion and decision-making: technocracy and rhetoric. His point is that the attitude of the rhetorician is more democratic—the idea is to convince someone of something by engaging her interests and desires, and to see demands for evidence and justification as a two-way street.

The gist of Fuller's argument is that for the university to be genuinely democratic, that is, for it to serve the public, the expertise 'protection racket' run by universities and professional bodies must be dismantled. This is not to say that there shouldn't be people who are trained to know things and who are recognized as knowing them, but rather that acknowledging the weight of data or the importance of rigor should entail a stance toward knowledge as something that is perpetually mediated, arbitrated, achieved and, from time to time, reconceived. What Fuller calls for is simply the admission that the plausibility of a claim can only be assessed within the rules of hypothesis testing set within a given scientific context, the space in which a certain kind of expertise is formed and exercised. In Fullerian terms, training and accreditation are the cost of entry into the 'high-rent epistemic district' called expertise (Fuller 2018a: 21). The activities of academic institutions and disciplines, professional bodies and accreditation agencies, he suggests, amount to different kinds of gatekeeping and boundary work, all of which, under the rubrics of selectivity and excellence, exists for the purposes of excluding people and expelling ideas. Thus, if universities are earnest in their claims to serve the public by producing and disseminating knowledge for the common good, then, rather than jealously guarding their journals, admissions policies and systems for research funding, they should lend a hand in tearing down the ramparts and bringing down the barricades that keep the public out, and aid in the redistribution of the epistemic wealth and social capital garrisoned within.

The insurrectionary metaphors are quite intentional, for what Fuller is aiming at is a revolution: he is essentially advocating epistemic socialism, i.e. the idea that the liberation of humanity will require that the means of production, distribution and exchange of knowledge be owned and regulated by the community as a whole. The academy cannot claim to be working for the public good without being prepared to prove it by committing itself to this revolution. Resting on the authority of expertise amounts to dismissively expecting hoi polloi to sit quietly with their hands folded on

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[3]Fuller (2018b) reminds us that concept of 'expert' is a late nineteenth-century juridical innovation that extended the idea of first-hand experience to include people with a specific training which puts them in a position to generalize over a variety of cases based on prior knowledge. In this respect, experts came to be licensed to speak as authorities, a caste of politically sanctioned and economically underpinned secular clerics, the edicts of whom cannot be questioned by the laity.

their laps and have 'trust in science' (i.e., bow to authority) in perpetuity in virtue of the inherited legitimacy endowed by titles and institutions. I take Fuller's challenge quite seriously, as I think we all should. But there is a philosophical conflict at the root of Fuller's vision. In the next section, I discuss what the public nature of higher education might entail if I am right about the nature of that problem.

Public Knowledge: A Matter of Gaining Exposure

The philosophical issue for the problem that I want to address is illustrated by Fuller's reading of the late Wittgenstein: He sees the latter as holding the position that our most basic frames of reference are 'utterly arbitrary'.[4] In his discussion of the view that he attributes to Wittgenstein, he writes: 'the knowledge game is not determined by the rules; rather determining the rules is what the knowledge game is about' (Fuller 2018b), a position that would seem to assume an unproblematic dichotomy between necessity and contingency. I take Wittgenstein to reject such a division. On another interpretation, what we learn from *On Certainty* (Wittgenstein 1969), for instance, is rather that while the arbitrariness of the rules for making knowledge claims may hold in theory, in fact, we can hardly make sense of what it would mean in concrete situations in which we have a need to know something. Any attempt to capture such a situation of radical transfiguration under prevailing epistemic conditions would not be a description of anything, strictly speaking, but a conjecture (or a poem).

Let us take as an example Wittgenstein's consideration of the truisms offered by Moore, which are supposed to show that we have knowledge of a kind such that it cannot be doubted, and on which science can be firmly anchored, since we can then know for certain that we do know that which we take ourselves to know. When Wittgenstein says that the sense of a remark such as 'I am here' is only in its use, we can take him literally, as noting quite simply that we would be hard pressed to find a meaning without a use: for example, as an answer to the questions 'Where are you?', or to notify one's partner that one has come home, or to offer solace to a grieving friend. Similarly, in the absence of a context, we don't have the means by which to 'make sense' of a statement such as 'Physical objects exists' (or its negation for that matter). We *can* meaningfully say that a chair is a physical object to someone who doesn't know what a chair is, or who doesn't understand what 'physical object' means. We can use the term 'physical object' to distinguish some things from other things.

Let us say, for instance, that I want to check the exact phrasing of a line from a play. I say to my friend, 'I want to see *Romeo and Juliette* ', and he replies, 'I don't think there are any productions on just now'. I might then say, 'No, no. I want to see

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[4]Wittgenstein never makes such a claim. In what follows, I will attempt to say something about why he does not, and why that fact is relevant for understanding what he does say.

the physical object', meaning that I want to check the script for the play lying on my desk rather than to see the play performed. In so doing, I need not tacitly embrace an ontological position or theory when I use the word 'physical'. Now, within the terms of the metaphysical game, say the competition between constructivists and realists in academic philosophy, the claim that physical objects exist or don't exist is not entirely unintelligible, since the context is clear: a kind of epistemic game such as Fuller describes. The question remains, however, if it has any sense outside of that kind of game (in the same way, we can ask if the moves in a game of chess have any sense without reference to the rules of chess). Much of Wittgenstein's later work can be described as an assemblage of reminders about what happens when words or signs are no longer doing their jobs (when they go 'on holiday'). One might say that when they are decontextualized, they become dysfunctional (which in turn gives rise to the sorts of paradoxes that vex professional philosophers).

Rules, in contrast to metaphysical principles, apply to the doings of the people who are going to apply them (say, by playing a game of chess). Two crucial features of rule-following are (i) that for something to be a rule, it must *apply*, i.e., it says something about how we generally do things; and (ii) a rule must be practically *applicable* for someone in the case at hand, in some respect. Our arithmetic, for instance, has developed for a use in a world where if you give me an apple when I already have one, I have two apples. In a world in which apples regularly dissolve into thin air, or spontaneously multiply, another way of counting might be in order. But that does not render the truth or correctness of $1 + 1 = 2$ *contingent* for us, as if we might, not in exceptional cases, but at any given moment, in fact not know what to do if someone asks us for two apples (Wittgenstein 1978: §157). On the other hand, there are cases in which $1 + 1 = 2$ is not applicable (if I add one small drop of water to another, I get a bigger drop of water, not two little ones). But should the equation have no application, i.e., become *generally* useless for anyone, 'that would be the end of all sums' (Wittgenstein 1978: §37). At the same time, it might still hold for a certain calculus, even if that calculus itself then had no direct application beyond itself. In that case, the equation *is* applicable for someone, namely for someone trying to solve a problem within that calculus. Naturally, deviant or perverse ways of adding are entirely possible even where and when a certain rule, say of addition, applies, but then, such ways of figuring are usually impractical, which is to say that they lack application or use. The best way of seeing what someone believes or understands, in mathematics as in life, is to see what they do, that is, in the former case, how they calculate. If someone is using our everyday arithmetic such as we learn in kindergarten to calculate something of our world (say, adding a liter of milk to two liters of milk), then we can judge if the mathematical rule is being properly applied (which is the same as to say that it is correct).

The important point to bear in mind when thinking about academic disciplines such as mathematics, or medicine, or history, or French, is that the relevant terms designate both an intellectual inheritance, i.e., a body of knowledge (knowing *that*), *and* certain kinds of activities, something that someone does (knowing *how* or *being able to* count apples, perform a coronary bypass, scour newspaper archives in order to understand the inertia of the League of Nations after Mussolini's invasion of

Abyssinia, read *Julie ou la nouvelle Héloïse* in the original language). The question for higher education is at what point different elements of *the body of knowledge* are to be introduced, and how they are related to established practices of calculating and measuring (or surgery, or source criticism, or French grammar, etc.). That canon, however, is entirely dependent on the form of life in which it *matters* or has a use for someone, i.e., has a meaning and purpose.[5] Knowledge and the education contributing to and emanating from it are in this respect intrinsically public in the sense that I suggested was most relevant: open, exposed and dispersed among those for whom it applies or might apply, which is to say, for those who can use it in their activities.

To calculate is not *to play at* calculating. This inward dimension, what one is aiming at, or doing 'on the inside', is not separable from the act of calculating, or trying to understand a book written in French, but is part and parcel of what it is to calculate and to learn a foreign language.[6] In that respect, all calculation and all learning are at once public and private, social and individual, for the one(s) doing or learning how to do something. Both calculation and opinion are public in the relevant sense, but meeting the requirements of, or most apt approaches to, a particular situation or activity (the correct application of a rule, such as of addition, for instance, a knowing *how* or being *able* to) is not the same kind of 'rightness' as that of political opinion or conformity to religious doctrine (a knowing *that*, or orthodoxy). Stating or affirming a belief is not the same activity for the person doing it as actually performing a mathematical operation or trying to figure something out: 'That's why following a rule is a practice. And to *think* one is following a rule is not to follow a rule. And that's why it's not possible to follow a rule 'privately'; otherwise, thinking one was following a rule would be the same thing as following it (Wittgenstein 1958: §202). When we observe the metamorphoses of rules and how they are applied, that is, when we study the body of knowledge, we perform a kind of history or sociology. But what Wittgenstein is getting at in pointing to knowing or understanding as an activity, he is doing something else. One might call it conceptual autoethnography, except that the 'auto' is the first-person plural of a community of practice.

In the academy, we are inclined to think that *all* statements having to do with the world ('truth claims') have the character of statements or beliefs, hypotheses to be tested, so that just as I might entertain an hypothesis about the existence of a planet, I entertain the hypothesis about the existence of my hand as I hold it up. That being the case, the game is that of justification: to provide sufficient evidence to render conviction, or certainty that a given judgment has been made properly and correctly.

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[5]See also Wittgenstein (1969: §38): 'Knowledge in mathematics. [One has to ask]: "Why should it be important? What does it matter to me?" What is interesting is how we use mathematical propositions.'

[6]A useful way of understanding the distinction between the canon and the activity is Vincent Decombes' (2014) distinction between 'objectified mind' and 'objective mind,' respectively (see especially the discussion on pages 292–295).

This involves, then, that an element of doubt has been introduced, which calls for a meta-reflection, an assessment that the judgment itself is not based on a mistake or a retrospective attestation that the evidence was in order and that adequate procedures were followed. The latter, in turn, involve implicit or explicit public standards of evidence and deliberation for determining the likelihood that a given judgment is correct. But Wittgenstein wants us to notice is that it is not the case that a mistake is merely *less probable* when we move from a conjecture about the existence of a planet to my raised hand. It is not a matter of weighing evidence or haggling over interests or perspectives. Rather, we come to a point where it becomes impossible in practice to think that one might be mistaken; to take that thought seriously would entail lacking any ground to stand on with regard to any statement about the world, and even any interaction with it. 'The grammar of the word 'knows' is evidently closely related to that of 'can', 'is able to'. But also closely related to that of 'understands'. ('Mastery' of a technique); "If I have exhausted the justifications I have reached bedrock, and my spade is turned. Then I am inclined to say 'This is simply what I do'" (Wittgenstein 1958: §150 and §217). Now, in theory, again, we can play with that idea (skepticism), but in the end, it would leave us nothing to think about or with, since that kind of radical doubt means not being able to do anything at all: 'we got to know the *nature* of calculating by learning to calculate'; '[c]hildren do not learn that books exist, that armchairs exist, etc., etc.,—they learn to fetch books, sit in armchairs, etc.' (Wittgenstein 1969: §476)

Fuller and Wittgenstein agree on two points: (i) However firmly philosophers hold on to their preferred methods and principles, they have no authority over how language and thought actually go about their business; (ii) knowledge is primarily a matter of being able to do something, or what Fuller calls 'modal power'. Where they differ is on the role of rhetoric. Wittgenstein is conservative. He thinks that we can continue taking for granted most of what we generally do and must take for granted, theoretical arguments based on philosophical or scientific concepts notwithstanding. Even if a prominent physicist were to assert, on the grounds of his expertise, say, that since all physical properties of an electron can be described mathematically, an electron (as well as everything else) is itself a mathematical structure (a pattern in space-time), it would have no direct consequences for how we conduct science or our lives (Frenkel 2014).[7] It makes no difference, for instance, when we count apples to make a pie. The pie is a mathematical structure in theory, not in fact. Indeed, as a metaphysical speculation, it makes no difference for the doing of physics, since the claim has no bearing on the application of the rules for calculation in physics or higher

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[7] I refer here to MIT physicist Max Tegmark's (2014) popular *Our Mathematical Universe. My Quest for the Ultimate Nature of Reality*, which makes this argument. In his review of the book for the New York Times, UC Berkeley mathematician Edward Frenkel (2014) applauds Tegmark's capacity to make recent developments in astrophysics and quantum theory accessible to nonspecialists, but is critical of the metaphysical claims he makes in the name of science. Responding to Tegmark's speculations of the multiplicity of selves in his theory of the mathematical multiverse—'When the number of yous increases, you perceive subjective randomness. When the number of yous decreases, you perceive subjective immortality.'—Frenkel responds, 'The real question, however, might be, What is the number of yous who can understand what this means?'

mathematics. In that respect, the world as mathematical structure is a concept that most of us at present can neither picture nor utilize. It's rather a kind of conceptual poem, an allegory for the actual work of astrophysics: 'as if everything solid and real is a mathematical pattern in time-space'. If I understand him correctly, the renegade Fuller thinks that pictures of this kind wield sophistical power and can function as epistemic game-changers.

Fuller and Wittgenstein agree that knowledge is not a purely or even primarily conceptual matter, that is, merely a question of the logical form of justification. We can show how concepts are established, contested and refined historically and socially. As a matter of fact, knowledge (scientific consensus) lives on continuous communal manufacture and maintenance in the sense that expertise that is no longer in use is in fact not 'known' in practice; and what counts as competence and expertise at any juncture is determined by a specific concatenation of institutions, priorities and aims. In this sense, knowledge is always already potentially public and inherently social. An incommunicable discovery or invention cannot become an innovation, precisely because it can't be realized, put to work in the service of expanding, deepening, applying or distributing knowledge. But, as a matter of principle, Fuller discerns the germ of democratized knowledge in the idea of a logic of justification (what was described above in terms of a 'meta-reflection') as central to the scientific spirit of inquiry. By allowing, at least in principle, anyone to examine the argument and weigh the evidence offered for himself, institutionalized methods of research can break the ties with the idiosyncratic origins of knowledge claims. In Fuller's terms, the positivist ideal of the unity of science removes trade barriers and reduces epistemic rent-seeking and thus opens up knowledge for general public ownership, which means that we, the public, must all take responsibility for knowing what we want or need to know or be able to do, that is, for what we valorize as knowledge, and accept the consequences of the actions taken or not taken and their success or failure as a consequence of the value so ascribed.

This stance invites the following questions: Is all insight, apprehension and understanding amenable to demands for justification, standards of evidence and procedures for ratiocination? Evidence and justification belong to cases in which there is reason to doubt, or at least where doubt has been introduced. But do we, or can we even, make and meet such demands everywhere and always? What kind of responsibility is this, that is to be borne by everyone and thus no one in particular? On the other hand, can we even speak of some insight or determination as knowledge if it has not been subjected to rigorous vetting? And, if so, what kind of duty could such insight possibly entail?

Higher Education: Modal Power to the People

For the purposes of epistemic sedition, whatever is established in the academic 'lamestream' can and ought to be made available to public scrutiny and challenged. And even from a pragmatic point of view, however seemingly stable our hierarchies

of norms and our methods, techniques and standards for assessing claims may seem to be, if they are at all viable to begin with, they will be all the more resilient if they are exposed to attack, much as the body's resistance to disease is strengthened by exposure to germs and viruses. In this regard, the busting of the knowledge cartels of traditional media and academia might be seen as the singularly most important step in the democratization of knowledge in the last century. On this account, the fiscal precarity of the journalism industry and the diminished authority of cultural and scientific institutions are salutary developments that inject vitality in the market-place of ideas, while professional axioms about neutrality in reporting or teaching as universal goods inhibit free exchange and silence dissent. Such claims to objectivity are also rhetorical—and always have been. Schumpeter's (1994 [1942]: 82–83) 'gale of creative destruction', denoting the ceaseless process of mutation that revolution-izes structures from within, has become the emblematic phrase for this intuition. As Mark Zuckerberg famously declared, 'Move fast and break things. Unless you are breaking stuff, you are not moving fast enough.'

Thanks largely to digitalization, the public's consumer preferences now decide what kinds of knowledge are desirable, indeed, they determine the very process of creation, valorization and dissemination of knowledge. Any qualms about this trajectory of perpetual technological disruption appear, not entirely without cause, as Luddite, fogeyish and undemocratic. If we formerly entrusted elites to do the right thing, can we not just as well trust the public at large? If virality makes the body more resilient, is this not at least as true of the mind? Perhaps it is time to acknowledge that all knowledge has always been user-generated and unvetted content that either managed to go viral among those with the power to apply, share and use it, or it has simply got buried in the long thread of epistemic history. Major news outlets and universities seemed to have taken the message to heart that if they have any role to play further down the road, they will simply have to improve their products: They will have to create excitement and enthusiasm, engage people's attention and take their potential customers' proclivities and tastes into account in selling their wares (if needs be, by consulting Cambridge Analytica). The name of the game is impact and growth, and these ultimate aims presuppose giving the people, individually and collectively, what they want.

Notice here that the boundaries between the media, techno-science and business are envisioned as fluid. Very soon, there will be no gates to keep or breach. If the effects on how people think, speak and interact can't be fathomed, that's because they are spontaneously produced and reproduced. Knowledge is finally free, or at least has loosened its shackles.

Fuller's campaign of 'modal power to the people', the proliferation of the ability to determine what is and is not possible to think, eschews the distinction between politics and science or facts and values as being grounded in some inviolable partition between spheres of human activity. The basic idea is that facts, i.e., assertions about states of affairs, are not descriptions but decisions: risky hypotheses that can be falsified by subsequent events and revised accordingly (Fuller 2018a: 141). In order

for this picture to hold, there cannot be any strict boundaries between the political, the economic and what one might call the 'ethico-epistemological', that is, Fuller's own conception of epistemic responsibility as discussed earlier.

In what remains of this paper, I want to suggest that we need to consider knowledge, not in the first instance as a body of knowledge or canon ('knowing that'), but as an activity ('knowing how'), which I take to be a Fullerian position. But I want to consider 'knowledge as activity' in a slightly different light, not so much as a matter of opening up for public decision-making in the construction of facts as a matter of sharing, and at times negotiating and revising, certain shared *habits and procedures for reckoning with* 'facts' or what is the case. I choose 'reckoning' because it is broader than 'calculating', without carrying the philosophical baggage of 'judging'. Let us take the example of 'reckoning with the existence of Sweden'. One way of reckoning with the state of affairs that 'Sweden exists' is to formally recognize its sovereignty and its borders, say, by refraining from violating them by deploying submarines into Swedish territorial waters; another would be to work politically to dissolve national economic or juridical barriers, say, by running for a seat in the EU parliament; a third might be to forge passports and help smuggle immigrants into the country. In each case, one is reckoning with a state of affairs as 'real' in the sense of 'something to be reckoned with'; indeed any of these actions or the deliberations involved necessarily takes the 'reality' of the state (the state of affairs abbreviated in the name Sweden) into account, but in no case must some ontological theory or position on the essence of statehood be assumed. The political 'truth' about the existence of borders can be hammered out in different military or diplomatic contexts; that is what politics is about. But those negotiations about what is or is not possible still and all recognize a given matter, what we do (develop microprocessors for biometric identification, sell weapons to India, etc.) or what is the case, to get started.

Similarly, the economic domain of exchange value (leaving use-value aside for the moment), the market, is something that must be reckoned with. Now, this is particularly difficult today, when financial derivative instruments such as futures and options play such an important role in the market. Since the value or price is derived from some underlying asset, which, it turns out, can be just about anything that one can speculate on, there is something especially intangible about this 'reality' that has such concrete effects on us all. Since derivatives can take many forms, it can be difficult even for regulators to maintain oversight of the market for derivatives. Yet, insofar as we save money for our children or our retirements, we are all part of the mass of 'uninformed investors' who blindly grope in the dark, which is to say, rely entirely on the authority of economic expertise. But however tricky it is to assign market value to something such as the weather,[8] it can apparently be done. There is a tendency to think that the same must apply to any 'asset', even ones considered by someone or some group to be 'priceless'. Here, we can see an analogy with the

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[8]A weather derivative is a financial instrument used by companies or individuals to hedge against the risk of weather-related losses. The seller of a weather derivative agrees to bear the risk of disasters in return for a premium. If no damages occur before the expiration of the contract, the seller will make a profit.

idea that the 'hypothesis' about existence of my raised hand is 'more probable' than one concerning a distant planet; on this view, the value of, say, a subprime loan for a house in Los Angeles is perhaps easier to fix a price for than, say, the risk for drought in northern Sweden, which in turn may be more tangible than the 'value' of Ayer's rock for the aboriginal people of the Northern Territory in central Australia. Still, the argument runs, in the end, it's a matter of degree (probability), not of kind. But as with the case of the raised hand discussed earlier, it can be argued that it is not a matter of probability at all, but of where one's spade turns: what I can in principle exchange for or replace with something else (knowing a certain way of ascertaining probability, for instance) and what I cannot (knowing that this is my hand).

Here there might be limits or bounds that some of us are inclined to respect. 'Chesterton's fence' is the principle that that we shouldn't breach gates before we have a satisfactory understanding of why they were put up in the first place:

> In the matter of reforming things, as distinct from deforming them, there is one plain and simple principle; a principle which will probably be called a paradox. There exists in such a case a certain institution or law; let us say, for the sake of simplicity, a fence or gate erected across a road. The more modern type of reformer goes gaily up to it and says, 'I don't see the use of this; let us clear it away.' To which the more intelligent type of reformer will do well to answer: 'If you don't see the use of it, I certainly won't let you clear it away. Go away and think. Then, when you can come back and tell me that you do see the use of it, I may allow you to destroy it […] But the truth is that nobody has any business to destroy a social institution until he has really seen it as an historical institution. If he knows how it arose, and what purposes it was supposed to serve, he may really be able to say that they were bad purposes, or that they have since become bad purposes, or that they are purposes which are no longer served […] This principle applies to a thousand things, to trifles as well as true institutions, to convention as well as to conviction. (Chesterton 1929: 35)

One might think this a traditionalist stance, but then one should keep in mind another popular quote from Chesterton:

> The whole modern world has divided itself into Conservatives and Progressives. The business of Progressives is to go on making mistakes. The business of Conservatives is to prevent mistakes from being corrected. Even when the revolutionist might himself repent of his revolution, the traditionalist is already defending it as part of his tradition. Thus we have two great types – the advanced person who rushes us into ruin, and the retrospective person who admires the ruins.[9]

There is thus a position that holds that the tension between the destruction and preservation of certain fences, gates, limits, borders and boundaries is what makes possible and necessary public discourse, the lifeblood of which is the education of the people. Knowledge of any kind must be in circulation, in practice, before it congeals into thing-like facts or theories, much less disciplines and institutions. But this solidifying has arisen for reasons, some of which are good, some of which are bad; some have served their purpose well and still do, others are obsolete. From the point of view of the reasoner, determining what to think in each case is by and large a matter of reckoning, together and individually, rather than theorizing.

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[9]Illustrated London News, April 19, 1924 (Chesterton 1924).

Epistemic Radicalization: A Bonfire of the Vanities?

The idea that certain ideas, norms or ways of reckoning are not transferable, malleable or reduceable to something else is connected to the very topical issue of identity: the question of who the public who share knowledge in common, among whom this knowledge is disseminated and to whom it is or should be exposed, is. Fuller views the popularity of 'trans'-phenomena (transgender, transracial, transhuman discourses) as the logical conclusion of the insight that the rules of the game can be changed, even at the level of personal identity. He suggests that trans arguments can and should be enlisted to nuance arguments made in the name of 'epistemic justice' (Fuller 2018a: 58). Fuller makes the case that epistemic justice would seem to entail justice toward knowledge itself, which would mean putting different theories of justice on the table for arbitration (with regard to merit, fairness, cost, benefit, etc.) when producing and disseminating knowledge, rather than fixating on some axiomatic criterion of truth, facticity, or equity. Fuller's complaint about the fashionable use of the notion of epistemic justice is that it assumes in advance an unproblematic conception of social justice with the normative agenda of identifying and correcting 'violations'. By contrast, he endorses public ownership of knowledge itself, which requires a general acknowledgment that scientific facts can only be judged by their effects, how they are taken up and used 'post-publication'. If we recognize that the knowledge that forms the basis of claims to expertise is established institutionally, not conceptually, that scientific consensus requires manufacture and maintenance, and that what counts as competence is determined by specific interests and alignments, then, working backward, a consensus based on a given set of specific interests and alignments can be manufactured and maintained by a group or community in order to constitute knowledge claims that can and should be admitted for consideration in a public negotiation with respect to their real and potential consequences.

Wittgenstein would presumably grant a number of Fuller's points as a correct critique of various forms of implicit realism and rationalism (including its dominant empiricist variety) as rhetorical devices for ensuring compliance and shutting out dissident, but would likely hesitate to underwrite a 'post-truth' doctrine about what knowledge is and has always been for the reasoner/reckoner. The general thesis is explicitly normative, assuming in advance of the formulation of a specific problem that it can and ought to be addressed in terms of its potential effects. But this occludes the question of why we want to know something in the first place. As soon as we say anything about knowledge as such, we are moving from a modus operandi for a specific analysis to an ontological claim. But we can accept the MO for analyzing a certain kind of knowledge production (say, its public or social character) without taking any theoretical stance whatsoever on what it 'really' is that we ourselves are doing. The first gives us science and scholarship, subject matter that can be taught, learned and applied, as the best we have for the time being (the body of knowledge in the field in question), together with a kind of grammar or instructions for use (rules) of the techniques employed for rendering the answers that constitute that knowledge.

The latter is an example of what gives knowledge claims their powers of persuasion, rather than reckoning, i.e., their 'rhetorical' character. My suggestion is that an alternative to this rhetorical characterization is what I have called Wittgenstein's 'conceptual autoethnography'.

A thinker who wanted to democratize knowledge, on not altogether dissimilar grounds as Fuller's, was Simone Weil. One might question the relevance of the visions of a Platonist communist mystic such as Weil for the bold, pragmatic social epistemology of Steve Fuller with regard to higher education, but, as a matter of fact, while their starting points and conclusions are profoundly different, there is a kinship in their respective accounts of a number of issues related to education, knowledge, certainty and understanding. Where Fuller wants us to see the fictive character of truth and the truth of fiction, for instance, Weil urges us to see truth in 'unreason', for instance, in the ramblings of a King Lear or a fool, someone without titles or dignities, that is, those to whom we don't think we need to *pay attention.* Weil distinguishes between truths such as '2 + 2 = 4' or 'here's my pen', the facticity of which depends upon reciprocal acknowledgement of what is the case and which rules apply, on the one hand, and moral or spiritual truths, on the other. We need not head the fool's ranting that 2 + 2 = 13, but that doesn't mean that we can simply disregard what he has to say about the human condition, which has to do with truths of a different order: 'Under the name of truth,' she writes, 'I also include beauty, virtues and every kind of goodness' (Weil 1951: 23–24 in Miles 2005). *Paying attention* is then for Weil a form of radical passivity or receptivity; it entails a stepping back from all roles, including that of the doer or 'knower'. It involves a distancing of oneself, not only from the things observed, but also from one's own faculty of observation. Attention consists in suspending our thought, leaving it detached, empty and ready to be penetrated by the object:

> […] above all, our thought should be empty, waiting, not seeking anything, but ready to receive it in its naked truth the object which is to penetrate it. All wrong translations, all absurdities in geometric problems, all clumsiness of style and all faulty connection of ideas […] all such things are due to the fact that thought has seized upon some idea too hastily and being thus permanently blocked, is not open to the truth. The cause is that we have wanted to be too active; we have wanted to carry out a search. (Weil 1951: 62 in Miles 2005)

The problem with both correspondence and coherence theories of truth, Weil might say, is that they are too pro-active, too hasty to make the world fit our plans and purposes. This is not to say that the methods of the sciences need correction, or should not be taught; rather, our philosophy, our attempts at understanding the human activity that constitutes thinking and knowing, is faulty. In that respect, Weil agrees with Fuller. The difference is that Fuller thinks that it makes sense to give a discursive account of truth, even while admitting its 'fictive' character. For Weil, the truth of truth can't be said, but only shown.

Similarly, Fuller and Weil share the same negative view of all forms of governance that take the form of an administrative class of highly empowered technocrats. Weil calls this modern hierarchical arrangement 'functional oppression'; true democracy, she thinks, is nothing other than the subordination of society (a reification of the people who constitute the public) to the individual—which, in turn, is also her

definition of true socialism. Like forces of nature, society and its institutions must be tamed so as not to pose a danger to the human being. For Weil, freedom is not merely the absence of constraint, nor a relationship between desire and its satisfaction (Fuller's 'modal power'), but a relationship between thought and action. Someone is free whose every action proceeds from a preliminary judgment concerning the end that she has set herself and the sequence of means suitable for attaining this end. As capable of thought, the individual will either respond to the necessities of life as if she were merely an organic or mechanical system reacting to the stimuli acting upon her from the outside, or, by developing a relation to those necessities from the point of view of conscience, be vigilantly aware that something in the world is real and of endless value aside from herself and her projects: that there is right and wrong, true and false, good and bad. The ability to distance oneself from such prompts determines whether or not one is free. Such an act of separation is not a matter of construction or persuasion, but, to borrow an Augustinian notion, a will to not to will.

It is precisely here that Fuller's vision clashes with Weil's. Fuller celebrates the heady enterprise of achieving goals. Weil emphasizes that anxiety about failure and missing targets set by others, the apprehension of being sacked for not meeting one's prescribed quota, or a pupil's fear of being castigated by the teacher for getting her sums wrong, for instance, impairs thought, which, above all, requires patience. The very possibility of thought, invention and the exercise of judgment is conditioned on having a time and a place to step back and consider what we're doing: 'And just as danger, exposure to suffering are healthy and necessary elements in the sphere of action, so are they unhealthy influences in the exercise of the intelligence. A fear, even a passing one, always provokes either a weakening of a tautening, depending on the degree of courage, and that is all that is required to damage the extremely delicate and fragile instrument of precision which constitutes our intelligence.' (Weil 1952: 27) To be deprived of the conditions for the exercise of the intellect is the very definition of enslavement: the necessity for speed and efficiency, and unthinking obedience to orders, prompts or protocols. We need only consider the current discussions concerning censorship through noise, and the worry that a referendum on reality is not a plebiscite but a riot. The clamor distracts us from what she calls 'methodological thinking' (Weil 2001: 62), which bears some resemblance in certain respects to what I have described as Wittgenstein's 'conceptual autoethnography'.

On this account, the democratization of knowledge as it is mediated by digitalization and monetization can very well lead to its opposite. In the never-ending competition to exercise the power to determine what is or is not thinkable, for others as well as for oneself, higher education will become faster, more focused and more efficient. But teachers and students will be anxious. They will persuade and be persuaded, but they will not have time to think. They will be unfree.

This point is directly related to Weil's notion of the 'sacred', which, for her is quite simply that which is what is good. What is sacred in the human being is not his person, but what is impersonal in him: 'Gregorian chant, Romanesque architecture, the *Iliad*, the invention of geometry were not, for the people through whom they were brought into being and made available to us, occasions for the manifestation of personality.'

(Weil 2005: 74–75) Nor moves in a power game, one might add. Observing manifest behavior, as it were, from the outside in, it may well be impossible for an observer to see the difference between reverence for the good, the true, and the beautiful (or even the correct), on the one hand, and attempts to win an argument or mold the world after one's own preferences and designs, on the other. But what it means to be doing something for its own sake, as a matter of principle, is what, for the one doing it, gives it the meaning it has, not due to their idiosyncratic inclinations, but as the very attempt to free oneself from them:

> Truth and beauty dwell on this level of the impersonal and anonymous. This is the realm of the sacred. On the other level, nothing is sacred […] What is sacred in science is truth; what is sacred in art is beauty. Truth and beauty are impersonal […] If a child is doing a sum and does it wrong, the mistake bears the stamp of his personality. If he does the sum exactly right, his personality does not enter into it at all. (Weil 2005: 75)

It should be acknowledged that most of what we today call art, Weil would likely consider unbeautiful, and the substance of what we do at universities, both in research and instruction, untrue. I do not mean to say that any of this amounts to some kind of demonstration that the economistic view of truth as a relative good, the value of which can be negotiated, is wrong, but simply that it misses the mark insofar as many of us, if not most, have an experience of the 'sacred' (the true, the right, the real) that is, seen from the inside, not as a matter of power or politics. To repeat an earlier formulation, to play at calculating is not to calculate. Similarly, winning an argument is not the same as getting clear on things. For Weil, there is an ever-present risk that our sense of reality can be conflated with existent institutions and practices; for this reason, we should pay all the more attention to conscience, not less. The problem with the liberation theology of contemporary liberalism is that it entreats us, even trains us, to see thinking, learning and knowing from the outside in, and ourselves as players on a field. There is much to be said for this approach, perhaps as a first step toward the décréation that Weil describes as a route to insight. One might even take Fuller's riotous debunking of academic pontificating about academic meritocracy and scientific method as a form of it. But he thinks that the show must go on, just under different direction. Weil, on the other hand, describing the need for rootedness from the inside, sees Plato's quest for something more permanent and more real as a fundamental orientation of being human. The feeling for the sacred, the priceless and non-negotiable, might seem nonsensical from an economic point of view, but that just says something about the limitations of a perspective in which the political, the commercial and the ethical cannot be disentangled.

Power, in Weil's account, is a problem for, not a solution to, the challenges of culture, education and politics, because power, insofar as it is conceivable, is something that 'can extend the foundations on which it rests up to a certain point only, after which it comes up, as it were, against an impassable wall. But even so, it is not in a position to stop; the spur of competition forces it to go even farther, to go beyond the limits within which it can be effectively exercised.' (Weil 1958: 72) In a word, power, any power, will have more, which invariably leads to confrontation and oppositions which can neither be comprehended, nor controlled or contained.

These confrontations give rise to a fictive language revolving around victory and winning that covers up its own impermanence, and the suffering of the losers and the vanquished. The game occupies all of our attention. Our thoughts are colonized by the discourse of competition, and we lose the capacity to take in the world.

In Weil's view, all error and all suffering stem from a lack of attention, an inability to grasp the world's contradiction as a means to understanding and insight. Moral 'truths', for instance, are ordinary, concrete experiences arising out of a rootedness in a common humanity. They are neither concepts nor language games, but a part of everyday life that gets buried under accretions of ideology, ambition and narcissism. To be able to pay attention means then to strip down these layers of false consciousness, what Weil calls 'décreation', in order to be able to perceive and bear an undistorted truth. This exercise requires a radical reassessment and recreation of one's own life and is in that respect ultimately individual. But it is not the autonomous individual of modern liberal democracy; it is the human being in her fullest humanity.

There is an important sense in which Fuller's enterprise is to take the liberal project of giving knowledge back to the people as far as it can go. On the assumption that liberalism is the promise of ever-forward moving liberation from ties that bind, such as tradition creates, then the name of the game is to unravel the knots. He is quite clear that his own aim is to be an agent of change, rather than a purveyor of truth. But while the theoretical position of standing outside the game to show how the rules can be fiddled with can have an effect on some players, it relies on our recognizing those rules as applying, but not quite taking them seriously. One *can* re-describe moral principles and venerated traditions of thought in playful terms as tactics, devices and stratagems for enhancing, empowering or entrenching a position. And there's abundant evidence, historically speaking, that the major players in science as well as politics have often done just that. But, on a homelier, more quotidian level, one which is the starting point for presidents as well as baristas, knowing or not knowing what time it is, getting our sums right or wrong, and having to make difficult moral decisions that will determine what kind of people we are, are all part of basic, ordinary human experience. From the *inside* of the shared habits, routines and practices that are open to everyone and to which everyone is exposed, which is to say always already *public*, the common predispositions that make possible such experiences (i.e., real life), knowledge and actions are not moves in a game, but constitute, inside and out, who we are, individually and collectively. The bedrock of knowledge is always already publicly owned, i.e. 'socialist'.

Now, as 'global thinkers', we are all inclined today to scoff at references to the authority of tradition; in so doing, we fail to take seriously the thought that our cosmopolitanism, seen from the outside, hangs on deference to one such 'tradition', albeit vast, among others. But the manifest experience of real uncertainty about the ideals of, say, universalism, tolerance and the rule of law would mean a total loss of orientation in society, i.e., anomie. The authority of tradition, both ethically and epistemically, is what gives us our bearings to begin with.

With regard to moral principles, the authority of tradition need not be treated as something threatening our freedom or hostile to the individual, but as intimately belonging to those who honor it. The rules of a tradition ought to be sufficiently stable

and common and so few such that they need not be reconsidered every time a decision has to be made. Simone Weil compares the strength of tradition with the practice of not eating poisonous or repellent things; what was once learned became second nature to every adult, for whom the restriction is not experienced as inhibiting her freedom to eat what she chooses. Only a child would feel it as an external limitation (Weil 1952: 13).

To learn something and know it is to develop one's ability to recognize and, when necessary, examine the common roots of one's own thinking. True, the conditions of our thinking are contingent, seen from the outside: the language that I learned as an infant, the social and economic factors of my childhood, the natural and manufactured environment in which I was raised, my schooling, etc., all might have been otherwise. Consequently, the most basic points of reference for my experience of the world, everything that I reckon with, can be seen as arbitrary and replaceable, in principle. But they are constitutive for the individual as much as for a society. They are the soil out of which all our ideas, hopes, inclinations and assumptions grew. While we cannot think outside them, our attempts at self-correction in our interactions with the world and other people are not experienced in our daily actions of telling time, buying a loaf of bread or waiting for the red light to turn green as some kind of arbitrary limitations set by tradition, but as the very conditions of possibility for autonomy for the individual.

Generating 'Publicity'

The preceding essay is a case in support of the point I want to make: I have not argued for or against a given position in order to persuade the reader to take a certain stance on the role of the public university. All that I have done is to suggest that it's a very complicated question. It has to do with which aspect of the 'public' we have in mind; it is related to the degree to which we see higher education in terms of an edifice of institutions, theories, concepts, facts, and techniques, or instead views these as common 'goods' that are developed in our shared efforts to understand, build and preserve a world that we share in common; it is intimately bound up with the everyday ways in which we make ordinary distinctions between what is the case and what we want to be the case (i.e., facts and values); and ultimately, it has to do with the recognition that we are all at once 'the public' and ourselves. The consequence that one might draw is not that teaching, research and scholarship rest on the assumption and exercise of expertise and the privileges that accompany it, nor that rationality and truth, however defined, are just euphemisms for successful disputation and forceful demonstration, but that science and society both would benefit from an ideal of attentive humility and hospitality in our epistemic ventures. In an age of hyper-commercialization, distractedness and rocketing oligarchy, there may be good reasons for fortifying our walls; but that shouldn't prevent us from building bridges over the moat and opening the portals.

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Sharon Rider is Professor of Philosophy at Uppsala University, where she was Vice Dean of the Faculty of Arts 2008–2014. She is Deputy Director of Engaging Vulnerability, a research program hosted by Uppsala University with funding from the Swedish Research Council (2015–2025). Rider's work focuses on the cultural conditions for autonomy, responsibility and knowledge, and how these might be conceptualized in ways that neither reject nor rely on conventional notions of rational agency. Recent publications include *Post-truth, Fake News: Viral Modernity and Higher Education,* edited by Michael Peters, Sharon Rider, Mats Hyvönen and Tina Besley (Springer 2018), and *World Class Universities: A Contested Concept*, edited by Sharon Rider, Michael Peters, Mats Hyvönen, and Tina Besley (Springer forthcoming 2020).

Part III
Education for Knowledge Socialism

Chapter 11
The University: From Knowledge Socialism to Knowledge Cooperatives

Check for updates

Ronald Barnett

The Very Idea of Knowledge Socialism

The idea of knowledge socialism implies a collective approach to matters of knowledge production and their social relationships. Being a little more precise, the phrase—'knowledge socialism'—suggests a collective ownership of the means of knowledge production and an equality in the social relationships of knowledge production. However, connotations of the idea of knowledge socialism are not exhausted by these considerations. The idea could be suggestive too of a collective sense of epistemic judgement, of access to knowledge and in its distribution.

It is evident, then, that the idea of knowledge socialism is something of a catch-all, covering many possible circumstances. What might be being held out for could be a situation, say, in which the *production* of knowledge would be in the hands of the many. Or it could be that what was envisaged by the phrase 'knowledge socialism' was a situation in which knowledge was circulating freely in society, that circulation being unencumbered by intellectual property rights or purchasing power. This would be a matter of knowledge being open to all. Or perhaps an advocate of knowledge socialism held to a sense that legitimate and secure knowledge would continue to be produced in limited epistemic spaces but that those in possession of that knowledge had a responsibility to disseminate it widely as 'public intellectuals', and so contribute to a widening of the public sphere. Or, to alight on yet a further situation, it could be that what was being contended for was a situation in which the power of knowledge judgements was widely distributed throughout society. Society would here be a kind of gigantic knowledge commune.

R. Barnett (✉)
University College London Institute of Education, London, UK
e-mail: ron.barnett@ucl.ac.uk

These connotations of 'knowledge socialism' could easily be extended but enough has already been said, I think, to indicate that the meaning of the term is elastic. For example, Wikipedia is a knowledge socialism *conglomerate*: it encompasses collective approaches to knowledge production, knowledge judgments *and* knowledge dissemination. But note that the actual means of production are not collective for the rules and the formats of Wikipedia entries are determined in advance. There is no communicative free-for-all here. In short, 'knowledge socialism' can do duty for many and quite different circumstances: it can be deployed with a relatively restricted set of meanings or a very expansive set of meanings. It follows that very little can be inferred from any advocacy of knowledge socialism as such. More work is required in order to pin down the precise sense(s) which the advocate or observer has in mind in speaking of knowledge socialism.

Emerging from these initial reflections is the following consideration. If the term 'knowledge socialism' is to do serious work, then it should be treated to interrogation along the lines of the classic texts on socialism, *but more so.* That key and central distinction between the means of production and the social relationships of production have to come into the fray. But then two avenues of further inquiry open up. For example, questions arise as to what 'ownership' is in relation to knowledge production. Does the very concept of ownership make sense? If so, it is far from straightforward. Normally, ownership in knowledge production is *diffuse*, being spread between originator (in the natural sciences, 'originator' itself can run to over a thousand individuals working in collaborating teams, as the names on a single scientific paper can testify), academic institution, publisher and even the state. The extent of the ownership enjoyed by these different parties varies across jurisdictions. In authoritarian states, the state wields more epistemic power than in marketized regimes.

What of that other major category in any framework for socialism, that of the social relations of production? Here, we run into more difficulties; and, indeed, practical matters that are frequently to be seen emerging. Think of cases where Nobel prizes have bypassed some investigators deemed critical to the research process in question [not untypically, where prizes have been conferred on men but not on the women who were at the sharp end of relevant discoveries, such as the case of Rosalind Franklin (x-ray diffraction) and Jocelyn Bell Burnell (identification of pulsars)]; or of priority disputes; or of the inclusion and the ordering of names of 'authors' on a published paper; or of the more intimate processes of recognition, rewards and promotions within university departments. In all these cases arise the matter of the relevant network: which is the relevant network and who are its members and how might they be recognised? Are prizes to go to all, and in equal measure? What are the social relations here? Are they relationships of hierarchy or equality? Is everyone to be equal all the time in these epistemic relationships?

The category of the social relations of epistemic production is, then, far from trouble-free. Even when narrowly bounded, it is not always clear how the relevant working group is to be defined or how its members might be identified or what their relationships might ideally be. But note: construing the matter of the social relationships of knowledge production in this way is itself unduly to constrain the issue. For, in the wake of 'the death of the author', nice issues arise as to whether or not

the readers, the interpreters, the analysts and the reviewers of the texts in question are not also to be counted among the social relationships of epistemic production. After all, in an emerging era where the 'impact' of publications counts for much, academic texts become literary texts, aimed at provoking or even enthusing the reader. A text's readers can, therefore, have good claims to be included within an understanding of the social relationships of epistemic production.

There are too matters that arise from a recognition that knowledge has inherently social characteristics. In knowledge production, there can be no Robinson Crusoes, no one-man bands, no single entrepreneurs and no self-made men or women. What counts as knowledge is an outcome of particular kinds of conversation conducted both contemporaneously (perhaps even across the world) and over the generations. Conversations are even held with the dead (the writings of the Greeks and so forth continue to be mined and critiqued). Furthermore, what counts as knowledge has to be *in principle* universally open. In practice, the principle goes characteristically unheeded but the point is that knowledge cannot be the outpourings of a closed sect.

It is evident, then, that knowledge *is* Social, with a capital 'S', as it were. Its sociality is part of the very logic of what counts as knowledge. And there is here a double sociality, reflected both in knowledge production and knowledge dissemination. Knowledge is social, through and through. It follows, therefore, that the very term 'knowledge socialism' can legitimately cause an eyebrow to rise. What is it that that 'ism' adds? Is it actually adding anything at all? My contention is that that 'ism' is not without its importance but that importance cannot be assumed, nor claimed in a facile way, but has to be argued through.

The Matter of Judgement

So far, in this essay, I have engaged in a series of skirmishes with the very notion of knowledge socialism, which have amounted to some cursory cautions about the concept. It is now time to mount a head-on attack.

A claim to say something that has substance to it does not in itself count as knowledge. It is at most a contribution to knowledge, knowledge being an assemblage of truth claims that hang together, that have some durability to them, and that carry the support of and are sustained by an epistemic community. Central to the formation and continuance of knowledge is judgement. Claims to be saying something of substance within an epistemic field have to submit themselves to scrutiny by the relevant epistemic community. Immediately, there are a number of elements present here, including those of collective assessment, critical judgement, openness of scrutiny and commentary, and of the possibility of further moves in the epistemic conversation. As stated, one of the elements in this set of epistemic processes is that of judgement and I wish to dwell briefly on it.

Kant observed that judgement takes two forms: it may be reflective, involving judgement as to, say, the appropriateness of a concept; and it may be determinative, involving judgement as to the way things are in the world. In the first case, judgement

may be either (A1) a matter of pure reason as it were (say in logic or epistemology) or may involve (A2) normative elements (say concerning values or policy directions). In the second case, the empirical world pushes itself forward and account has to be taken of it in some way; and this will vary across (B1) the natural sciences on the one hand, and (B2) more hermeneutical studies of human life on the other hand. Judgement serves as a bridge across these (respectively) cognitive and practical domains: 'judgement in general is the ability to think the particular as contained under the universal' (Kant 1987/1790: 18).

In *all* of these cases, in order to gain legitimacy, a judgement has to have—to use Toulmin's (2003) term—'warrant'. Warrant, however, is here not a unitary term since, in epistemic matters, warrant is supplied by the authority of a person or group making a judgment and by the totality of the institutional apparatus supporting that authority, as well as the attested legitimacy of the claims in question.

Picking up on a distinction already present in the philosophy of science, Popper (2002) made much of the distinction between the context of discovery and the context of justification. It is an important distinction but it can be overdone, not least because of Popper's focus on science. Justification has meaning in particular contexts of inquiry. Warrant gains its substance from the dual presence of an argument and justification, by the norms of the intellectual field in play, and by the total institutional setting in which those argumentative processes are situated on the other hand. To a disconcerting degree, discovery and justification take in each other's washing. And the balance of all of these elements will vary across the four cases of inquiry (A1, A2, B1 and B2) just identified.

I think we can see that the idea of knowledge socialism becomes especially fraught with difficulty when all the elements of institutionalised inquiry, and judgement therein, come into view. At what point in these epistemic processes might the concept of knowledge socialism have bite? In judgements, in the construction of the social setting, in the foundations of the warrant, in the authority that might be demonstrated or in the institutional apparatus within which any such epistemic processes are conducted? And might it differ across disciplines and, say, as between formal knowledge and ethics? Surely the proponents of the idea of knowledge socialism are in difficulty here, in relation to this matter of judgement?

Either the idea of knowledge socialism comes into play in relation to some of the elements of epistemic processes, in which case, the precise elements in question need to be specified; *or* it comes into play in none of the elements of epistemic processes that have just been identified. In that latter event, the proponents of knowledge socialism would be then obliged to specify just where the term might be instantiated. But note: even if that further move could be accomplished, with knowledge socialism being located in quite some other domain—say in the public sphere or in societal communicative processes or in societal influences on topics taken up in knowledge production or in the fluidity of knowledge and knowledge claims in the present liquid age (Baumann 2000)—that would leave the inner epistemic processes quite untroubled by the matter of knowledge socialism. In the process, too, wherever it might be located, knowledge socialism would seem to be a rather limited phenomenon, located at best on the fringes of knowledge production.

The University in an Ecological Perspective

At this point, we should turn to the university. The university, after all, came to be the primary site of knowledge production over a period of many centuries. However, there are two riders to this observation. The *first rider* is that, as is frequently observed, the university no longer possesses any claim to be dominant in knowledge production; and there are *two sub-points here*. The first is that over the past hundred years or so (but especially over the last half century), the university has increasingly been joined by all manner of other institutions, notably science-based corporations, state-backed organizations (in defence and security), think tanks, professional bodies, and government agencies and ad hoc government national inquiries: systematic knowledge production is now diffuse across society.

The *second sub-point*—as to the loss of epistemological sovereignty that has befallen the university—is that the emergence of the Internet has fundamentally changed the epistemological landscape. It is not so much that knowledge production is now peculiarly socialised but more that assessment of knowledge claims is now more or less universalised. Knowledge is now produced and legitimised in and across society. This, after all, is one of the meanings of 'the knowledge society', that the sources and, moreover, the legitimisation of knowledge are widespread. The university no longer has—if indeed it ever had—a monopoly even in epistemic judgments. Knowledge socialism beckons but caution is needed.

The other rider—concerning the significance of knowledge production in and to the university—is that its involvement in knowledge is just one of a number of functions of the university in the twenty-first century. Alongside knowledge, the university has become irrevocably bound up with the economy, human subjectivity and identity, learning and learning systems, social institutions, culture, the polity and the natural environment. These zones befall each and every university, albeit in differing measure.

Each one of these eight zones may be considered to be an ecosystem, for each is an assemblage of entities, loosely inter-connected, having propensities towards self-reproduction and internal sustainability but exhibiting some fragility, not least as the relevant entities—internal and external—exhibit levels of differential power and mutual conflict (Barnett 2018). For example, we may inquire into the totality of the knowledge ecosystem across society: Is it in good health? Is it impaired? To what extent do its constituent parts work together or, to the contrary, to what extent do they conflict? Is the university playing its due and proper part in sustaining and developing this knowledge ecosystem? And, as with the natural environment, we can inquire as to whether any of the elements of the knowledge ecosystem are disappearing. Just as the disappearance of the glaciers is an indication of grave disturbances taking place so, too, for example, the weakening of the humanities is testimony to malign epistemic forces at work in the entire knowledge ecosystem.

These two riders are complementary to each other. The one observes that the university is but one player in the knowledge system of society. The other observes that the knowledge system is itself but one of a number of ecosystems with which the

university is bound to interact. We have here a nice set of instances of the layering of assemblages to which DeLanda (2006) drew attention in his depiction of society. [I prefer to speak of ecosystems since that term opens considerations of humanity's responsibilities towards and interests in well-functioning systems. To speak of ecologies is to speak of facts and values in the one breath (cf. Latour 2004)]. By extension, we might speak of a single university as an ecosystem—with its parts more or less cohering together, but yet exhibiting a falling short of their collective possibilities. Any university is—as stated—interwoven with a number of ecosystems of society; and, just a moment ago, I identified eight such ecosystems. In turn, all of those ecosystems can be seen to be present at global—as well as national—levels.

The question arises, then, as to what 'knowledge socialism' might mean when conjoined with the university and when viewed in this ecological perspective. There are plusses and minuses. The minuses are the following. It is unclear as to whether or not the university should pay heed to a socialism in any or all of the other ecosystems with which it engages and, if so, what priority it might or should attach to knowledge socialism. Should the university be paying attention at the same time to a cultural socialism, an economic socialism, and wider societal socialism, a learning socialism, a political socialism and an environmental socialism? Let's assume that the answer is yes (whatever might be meant by any of those other socialisms). But why then, for the university, should knowledge socialism take the palm? Does it have a particular call on the university's attention, priorities and resources that those other socialisms do not possess?

Let us assume a definite answer. Suppose it is said, in response, that 'yes, knowledge socialism has a particular call on the university's attentions because the university is centrally and conceptually concerned with knowledge'. But that does not get the university off this ecological hook. The world, indeed the Earth, calls the university forward now and the ecological demands and responsibilities are widespread, across the many ecozones in which the university participates. (And this 'participation' is real, independent of any will on the part of the university; these large ecosystems act as 'generative mechanisms' (Bhaskar 2008:49) effecting their influences upon the university, prompting responses from the university. The only question is the extent to which the university responds intentionally, and deliberately, to these ecological callings.)

However, while this ecological perspective poses problems for the university's socialism, it also opens opportunities. Central to the idea of an ecosystem is that of networks and so the knowledge ecosystem can be seen as a network, even a network of networks. We have already intimated some of the networks that are centrally present here. But, as Latour has been at pains to point out, knowledge networks have little in the way of boundaries. Not only do they include the research assistants in the projects but they also include the maintenance staff who keep the building open and warm so as to enable the lone research assistant to work in the laboratory in the night.

But now, as noted, these knowledge networks extend far beyond academic institutions and have both direct and indirect aspects. Directly, these knowledge networks extend to corporations, local authorities, central political authorities, think tanks, and

private sector businesses and so on. Indirectly, and aided by the Internet and social media, the university's knowledge networks reach out to many others. These direct and indirect connections can, of course, interact as when university researchers are involved in community projects and use the Internet to heighten the involvement of community members in those projects.

Against the context of this hazy grasp of a university's complex knowledge relationships, the idea of knowledge socialism can begin to pose some searching questions; questions that might lead however to a glimpsing of *new possibilities* for the university. In its *internal* relationships, might a university's epistemic processes be widened? Might there be some who are overlooked now be recognised? And what form might such recognition take? Presumably, 'knowledge socialism' is not going to be extended so as to include the maintenance staff on the title page of papers appearing in the academic literature, but might there be some recognition of the actually rather crucial role that many in the university play (who are not immediately involved in the epistemic processes themselves)? Just how generous do the advocates of 'knowledge socialism' wish to be? Where are the limits of this generosity?

A non-contentious way in which the term 'knowledge socialism' might win its spurs lies in the way in which universities are reaching out beyond themselves not just to disseminate their hard-won knowledge but to gain help in advancing it. Various scenarios are already evident, in which the social relations of knowledge production vary. Departments in astronomy and archaeology may actually enlist the aid of 'citizen scientists' (it is not unknown for a planetary body to be named after the amateur discoverer); social science and history departments draw on the memories of people to construct oral histories; those fortunate to own back gardens help worldwide efforts against global warming by observing patterns of bird movements over time. In this epistemic situation, in which citizens in effect become 'researchers beyond the university walls' (Finnegan 2005), the university retains control over the knowledge production process, while the social relations of epistemic efforts become much more pliable, and inclusive. Even there, though, in the social relations of knowledge production, there remains a hierarchy: all are not on a level.

Who Judges the Judges?

I was suggesting earlier that the matters of knowledge and judgement are intertwined. For a proposition, belief, or understanding to be said to count as knowledge, it has to be linked with a set of propositions, concepts, theories and understandings that already are said to constitute knowledge. This linking is not a casual matter but comes about as a result of judgement. The concept of knowledge is inseparable from the concept of judgement. To count as knowledge is to come up to some set of standards. 'Knowledge' is an evaluative category. To term a body of beliefs 'knowledge' is to award it high marks, with judgements having to be made as to whether any claim or view *satisfactorily* connects with an existing body of knowledge.

Of course, there are rare examples where an individual or a group branches out on their own and attempts to form a new discipline. Even there, however, persuasion has to take place and conversations of various kinds conducted such that, over time, assent is given to the new discipline. Again, therefore, judgement comes in here and actually in spades, for the process of persuasion—that a bone fide discipline is in sight or is in formation—may be long and arduous. Judgement is critical in such a case.

But who is competent to judge? And who judges the judges? As knowledge splays out across society, not only in its consumption but in its production, the matter nags its difficulties. Is anyone to be excluded in this judgemental process? The questions point up simultaneously the significance of judgement *and* its fragility. This fragility is two-fold: judgements are always fragile and the apparatus of judgement—within which judgement takes place—is also fragile. The university has key roles to play here, in providing an institutional apparatus to reduce this double fragility. It does it directly, by giving livings to individuals and groups involved in the sustaining and generation of knowledge; and it does it indirectly, by supporting the activities of those individuals and groups in the international 'invisible colleges' of the disciplines. These invisible colleges are central to the matter of judgement, which they have institutionalised in learned journals and academic conferences (with their refereed papers) and ventures with major publishing houses and so forth.

This apparatus is fine-grained. Whatever authority I might have in the philosophy of higher education counts for naught in relation to physics or nineteenth-century feminist literature. Indeed, it cannot fairly be said that I can judge at all in those domains. I might utter words, but they could never count as judgements *within* those domains, since the concept of judgement implies an authority to judge. I am rightly excluded from being permitted to judge in those domains. Knowledge socialism— *however* it might be interpreted—has its limits. However, note that within a field, the first-year undergraduate is granted a licence to question the most senior professor, say in a public seminar. In *this* sense, the social relations of knowledge production are fully socialist. Total equality in posing questions. But note, too, that little rider: '*within* a field'. The professor has no responsibility to reply to a first-year undergraduate who just happened to wander into the seminar (perhaps having become lost in the building and on the way to another event) and who was from a totally different field.

Note, also, that the context here is one of posing questions. It is not a matter of making authoritative pronouncements. The first-year undergraduate is not going to be accorded the right to judge with authority, except in those circumstances where an individual has won that right. Perhaps the pedagogy is such that a class of undergraduates has been set to conduct their own inquiries on a multi-disciplinary project and succeed in coming forward with quite new findings, insights or even ideas, worthy of being published. (And perhaps this will be more frequently the case as curricula are designed to bring research and teaching close together, such that groups of undergraduates are encouraged, in effect, to become researchers.) Or perhaps an individual undergraduate has become so fired up—say with a particular problem in mathematics—that they produce something that immediately lends itself to publication in a leading journal; a situation not unknown.

The central matter here is one of judgement and with it the matter of authority. The epistemic basis of academic judgement cannot be socialist *in abstracto*. The authority to judge has to be earned, and it is not a right. In epistemic matters, there can be no human right to judge. And only the judges can confer this right to judge. This, of course, is profoundly inegalitarian; profoundly *anti*-socialist. But that is the way matters are in the epistemic domain. Only so can knowledge count as knowledge and stand its corner in this 'post-truth' age.

It may be remarked that such talk of disciplines is to hang on to epistemic boundaries that are fast dissolving. This dissolution of the boundaries takes two forms, internal within the academic community and between the academic community and the wider world. I shall attend to the first of these here and come to the second in the next section. Increasingly, it may be observed, disciplines are becoming porous to each other. On the one hand, they are turning more to address issues in the wider world, which do not present in neat disciplinary boundaries but require the resources of multiple disciplines—and terms such as multidisciplinarity, interdisciplinarity and transdisciplinarity have been invoked for fifty years to do justice to this situation. On the other hand, the Internet may be understood as a fluid epistemic space, where ideas, concepts and theories may easily be taken up into strange lands, and even put to mis-use in other fields (as some might see it). The matter of the competency—and the authority—of the judges becomes stark in all such circumstances.

Prima facie, it may seem that, under such conditions, legitimacy becomes a matter purely of custom and practice. But this would be an over-hasty reading, for ultimately, in order to justify itself as an addition to the pantheon of knowledge, the legitimacy of the new offering has to gain assent. Reviewers of the submitted paper—no matter how 'rhizomatic' it may be, branching out waywardly this way and that, presenting a collage of epistemic resources drawn most widely—ultimately have to grant their approval. The text has to secure endorsement, even if rather new and even youngish reviewers, more comfortable in quickly crossing diverse territories, have to be found. *The matters of judgement and authority cannot be evaded, even in this Internet age.*

The University and the Public Sphere, Not Least in a Digital Age

The public sphere, that relatively autonomous sphere of 'communicative reason' (cf. Habermas 1984) separate from the state and from instrumental and bureaucratic reason, has come to find itself in prospect of being overrun ('colonised' indeed) by those forces of calculative and manipulative reason. The emerging social media play a Janus-like role here. On the one hand, they become a conduit for populism and for corporate and state tracking and even surveillance; on the other hand, they offer totally new possibilities for the emergence of new forms of public sphere. In this milieu, 'knowledge socialism' can be a trope that skims across the open expression of beliefs that are actually the ventriloquising of ideologies. In social media, the

one can speak to the many in a way never known before but still be a carrier for the ideologies of the powerful. Social media here become steering mechanisms for those interests. (In the UK, the 'Brexit' debate has surely offered a prime example of these tendencies, which allegedly have included manipulation by external forces.)

It is surely evident, on the analysis here, that such a use of the term 'knowledge socialism' is untoward. In his foundations-shaking paper (actually, it was a three-page note), Gettier (1963) showed that there were always difficulties with treating knowledge as 'justified true belief' but, as we have noted, there have to be some connections with justification and truth, and they require a heavy dose of judgement; and judgement, we have seen, in turn, requires the presence of attested authority. It follows that, if the term 'knowledge socialism' has work to do in the sphere of social media, it can only be through social media being in part a space for the circulation of authoritative judgements, that is 'knowledge'. Only so can social media be realised as a space for the emergence of a genuine public sphere, a sphere in which members of the public draw on knowledge and not only help it to circulate but may also assist its development (as we noted earlier).

We have to tread lightly here in what is an increasingly complex situation—in the formal sense of the term 'complex', with its implications of openness and unpredictability. We see emerging pools of knowledge production, dissemination, circulation, and commentary. Not only are the actors and the agents involved spread across society—everyone can be their own critic now—but actors and agents take on different roles in different networks. Very quickly, we have moved beyond Castell's (1997) depiction of the 'network society' with its locatable nodes and flow to a much more interlaced lattice and layers of communication. Ingrid Volkmer has done much to advance our understanding of this new situation and has developed a theory of 'interlocuters' within 'matrices of influence' (Volkmer 2014: 146–155). Volkmer focuses on broadcast companies across the world, and observes 'the great diversity of … audience[s]' (155), a single audience containing both illiterate tribespeople and professors in Los Angeles.

Under these conditions, possibilities open, as Latour (2004) put it, for a 'new constitution', with new relations of collaboration across the parties to different conversations. No longer can science—that is all formal knowledge and understandings of the world—assume that it can be the sole arbiter of rightness. Science should and now can be democratised (and Latour brilliantly identifies the conditions of just such a new constitution). In the process, old distinctions such as those between fact and value, the human and the non-human, and the internal (to science) and the external world, all have to be rethought. And the parties and their relationships, we may consider, will vary across topics as, for instance, the relationship between facts and values alters. The strength, authority and contribution that different parties will bring, for example, to matters of abortion, energy supply, nuclear weapons, civil freedom, the care of the elderly and tax affairs, will vary considerably.

Under the presence of this overload of channels of communication, communicative agents, communicative processes and relationships, the category of 'knowledge socialism' becomes yet more fraught. However, it can perhaps do duty as a rhetorical gambit, as an effort to depict the swirl of world-oriented conversations and their

multiple conversants, with *x and y each having consecutively to give way to the other*, in a search for legitimate understandings of significant matters.

The University and Reasonableness

Here, then, is the opening of a role for universities in the twenty-first century, that of a tacit advocacy of *reasonableness.* Its full exposition must wait for another day but it would, for example, build on the ideas promulgated by Englund (2008) over the past decade of 'deliberative communication', of the idea of the university of wisdom advocated for forty years by Maxwell (2007) and that of 'knowledge activism' recently proposed by Kennedy (2015). The central idea would be that of the university deliberately injecting itself into public debates, injecting its total armoury of epistemic resources, of empirical evidence, of careful reasoning, of differential perspectives across intellectual fields, of critical questioning, of forensic excavation of interests and so on.

This would not be any kind of epistemic imperialism: it would not be a case of the university telling but rather *showing*. It would be a *tacit* advocacy of reasonableness since it would be simply exemplifying reasonableness in all its forms, rather than explicitly advocating reasonableness. It would be injecting itself into the public realm by engaging with specific issues and debates. Moreover, it would do so sensitive to there now being public spheres; that is, plural if overlapping public spheres involving different assemblies of politicians, think tanks, citizens, professionals, commentators and journalists, with each sphere having its characteristic favoured forms of communication, even within social media.

Englund's idea of deliberative communication is particularly helpful here but now needs to be extended beyond the educational sphere, so as to allow for participants in public debates having different interests and resources to bring to the party. The university's particular strengths lie in its centrally exemplifying a space of communicative reason, and across a multitude of different forms. The university, however, can only play this role in an ever-widening set of public spheres if it holds to its being a space of authoritative judgemental reason, with both qualifiers—authority and judgement—being understood to be crucial.

A Strange Juxtaposition

Fundamentally, what has emerged in this exploration are two axes. *A first axis is internal-external*, namely epistemic matters that are internal to the academy (understood as the total ecosystem of higher education across the world) *or* are external to the academy in the worldly knowledge economy. The *second axis is that of the forces and social relations of knowledge*, that is knowledge production as a force in

its own right on the one hand, and the social relations of knowledge production on the other hand. Placed against each other, these two axes generate four quadrants:

(a) Knowledge production within the academy.
(b) The entire knowledge ecosystem, where the academic sector is but one player in epistemic production.
(c) Social relations of knowledge production within the academy.
(d) Social relations of knowledge production and circulation in the total knowledge ecosystem (including the university sector).

It has turned out that neither *internally* nor *externally* is the juxtaposition of 'university' and 'knowledge socialism' especially happy, whether in the *forces* of (knowledge) production *or* in the social relations of (knowledge) production and distribution.

In each of our four quadrants, the idea of 'knowledge socialism' runs into difficulty, even though it has certain virtues. In (a) internal knowledge production (that is, within the university), the trope of knowledge socialism is an elephant trap for the unwary. Academic knowledge production proceeds according to certain protocols and standards particular to each field, even if those protocols and standards are matters of continuing controversy. There can be no socialism there. Feyerabend (1978) might have urged that 'anything goes' but, in fact, his books are undeniably those of an authority, whose judgements—however unpalatable to some—spring from enormous scholarship on his part, at once historical, anthropological, scientific and interdisciplinary. Authority and judgement are not lightly won. Anything goes only on the basis of severe standards being met.

In (b), that of knowledge production across the knowledge ecosystem as a whole, 'knowledge socialism' has some purchase but it is as an honorific category. As noted, in the digital knowledge economy and knowledge society, there is a growing multitude of epistemic agents—or putative knowledge agents—the university sector being but one sub-system in the total knowledge ecosystem. 'Knowledge socialism' takes on meaning, albeit a limited meaning, in alluding to the seeming free-for-all in this knowledge marketplace of ideas, readings, representations, and constructions, which are but veneers for discourses and ideologies. Here, the academy struggles to play a part, having to fight its own corner. In this quadrant (b), 'knowledge socialism' is misleading in invoking a sense of an overturning of the powerful and the powerless for the academy never enjoyed much power, but it has a point to make in observing that the forces of knowledge production are now more evenly spread. It is misleading in invoking a sense of there being just two parties—the epistemologically powerful and the epistemologically powerless—when there are now a multitude of sites of epistemic production.

In (c), the social relations of knowledge production within the academy, matters are more nuanced. The junior academic has the right to have a go at the most senior academic within the one intellectual field. Ideally, there is something approaching a Habermassian 'ideal speech situation' in which participants in a rational discourse are governed only by the power of the better argument. (In practice, certainly, matters do not always obtain this lofty ideal.) *There is here a knowledge socialism of a kind*.

It is, though, highly limited, to social relations only *within* each field (as implied, the Nobel prize winner in Physics has no authority in assessing an undergraduate essay on feminism in Victorian novels).

In (d), social relations across the total knowledge ecosystem, everyone starts more or less at the same point, some a little ahead but some a little behind. In some settings, the academy starts in position of mistrust: in some quarters, its voice is not so much shouted down as disregarded, being framed as advancing an ideology of reasonableness no longer felt to be conducive to 'innovation', 'getting things done' and 'even-handedness'. Some see virtues here. The power of the academic field in epistemic framings of matters was always overblown and now, not least with digital and social media, everyone can have their say: one person can speak to the many. But to deploy the category of 'knowledge socialism' here, in knowledge production generally, is to draw on the term only in a somewhat *casual* sense, for the elements of authority and judgment are now having to be negotiated anew for each matter under consideration (from abortion to energy supply to global warming).

Conclusions

The idea of knowledge socialism may, for some, be beguiling. It seems to speak of a new epistemic order, in which the peoples of the world have much more power over the ways in which the world might be represented. The world can much more be *their* world, a world in which they have had a much larger hand constructing for and by themselves, instead of having worlds imposed upon them. Who could not be in favour of such knowledge socialism? The big battalions—great corporations (some of which have monetary assets greater than some countries), and powerful states—have been having the field to themselves in framing understandings of the world, aided and abetted by the great research-intensive universities of the world (whose financial assets rival that of small nations). Now, not least in a digital age, the powers of knowledge production are—potentially at least—hugely distributed across the peoples of the Earth. A poor person in India armed with a smartphone can now speak to the world. However, so can a malevolent nineteen-year-old in a bedroom in any part of the world do so (and particular cities are notorious in giving room to such activism), and spread 'fake news'.

The university is heavily implicated in all of this; and this complicatedness has been heightened over recent decades, as the university has been drawn more definitely into contemporary and emerging forms of capitalism (with its labels of 'post-capitalism' (Mason 2016), 'cognitive capitalism' (Boutang 2011), 'knowledge capitalism', 'algorithmic capitalism', 'cybernetic capitalism', 'bio-capitalism' (Peters 2013) and 'surveillance capitalism' (Zuboff 2019). Whereas the university once aligned itself with the ideas of openness, democracy and freedom (even if those conceptual alignments were often neglected), now the university is on the cusp of being held in thrall to interests that would own knowledge and market knowledge (to

the highest bidder), and which would limit knowledge circulation in the university's collusions with the corporate sector.

In this milieu, 'knowledge socialism' can appear to both to be pointing to restraints upon the academic sphere but also open new epistemic missions for the university. Now, taking advantage especially of the affordances of the digital age, universities can and should recalibrate their activities and play their part in helping the circuits of (authoritative) knowledge to flow more evenly across society. Aids here include the promptings of the United Nations sustainable development goals, debates about the public goods that universities might supply, a resuscitation of the idea of the civic university and a reclamation of sub-themes of openness, all these currents of which are flowing towards the university.

But, as we have seen, the juxtaposition of 'university' and 'knowledge socialism' holds traps for the unwary. The analysis here has been along the fissure of those long-standing categories of the *forces of production* and the *social relations of production*, and also in terms of epistemic processes *within the academy* and those *between the academy and the wider knowledge ecosystem.* At each step, the category of knowledge socialism has taken on its own particular value but, again at each step, has been seen as possessing limited value. The key matter has lain in two elements of what it is 'to know' and of what counts as 'knowledge'. If the concept of knowledge is still to do work, not least in a 'post-truth' age, the elements of judgement and authority have to be brought to bear. However, judgement and authority are now subject to perpetual negotiation and in local situations, in which the university can no longer assume its own authority. These two elements at once caution against any non-specific usage: *whenever* the term 'knowledge socialism' is used, the speaker or writer should be pressed to locate its intended meaning, locus, and scope.

Here, the judgement must be that putting 'knowledge socialism' and 'university' together is an unhelpful juxtaposition. 'Knowledge socialism' may be a helpful provocation, prompting universities to reflect on the extent to which (internally) their academics have equal rights of recognition for their academic labours, and to which (externally) those academics are reaching out to the wider world both digitally and as public intellectuals, not least to address the epistemic inequalities manifest across the world and to experiment in ways of working with citizen scholars. 'Knowledge socialism' has turned out still to possess value as a rhetorical gambit, especially in relation to *external* knowledge production and its social relations but much less so in *internal* knowledge production and its social relations.

A Proposal

'Knowledge socialism' has turned out to be rather empty as a substantive concept but to possess rhetorical value. This nuanced situation may be unsatisfactory to the adherents of the idea of knowledge socialism but, on the analysis here, that—nevertheless—is the way matters have turned out. *Moreover*, knowledge socialism is far too

much of a unitary idea to do justice to the present multiplication of quite varied situations with different power relations and local negotiations across epistemic agents, public spheres (plural) and topics. 'Knowledge socialism' pretends to a uniformity in epistemic matters that no longer holds.

Perhaps a better term might be that of '*knowledge cooperatives*'. The cooperative movement, after all, grew alongside socialism—both being concerned to promote a non-hierarchical world, and a sharing community—but it has come to possess a less revolutionary resonance than socialism. It being the less fervent of the two, the idea of the cooperative allows for a plurality of experiments on a local scale, with much variation in the actual forms and social relations of production. In turn, 'knowledge cooperatives' would be an umbrella term doing duty for differences across knowledge communities, and relationships between knowledge producers and knowledge consumers, and for knowledge networks of vastly differing proportions.

Put with 'university', 'knowledge cooperatives' would invite the university to work internally and externally, experimenting in cooperatives of knowledge production, consumption and dissemination, and with differing kinds of social relationships. 'Knowledge cooperatives' (the plural is itself potent) and 'university' just could be a happy conjunction.

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Ronald Barnett is Emeritus Professor of Higher Education at University College London Institute of Education. He is a past Chair of the Society for Research into Higher Education (SRHE), was awarded the inaugural prize by the European Association for Educational Research for his 'outstanding contribution to Higher Education Research, Policy and Practice' and has been elected as the inaugural President of the Philosophy and Theory of Higher Education Society. He is a fellow of the Academy of Social Sciences, the SRHE and the Higher Education Academy, has given 150 keynote talks across the world and is a consultant in the university sector.

Chapter 12
The Prospects for Knowledge Socialism in One Country?

John Morgan

Introduction

This chapter was written at a moment of significant political defeat for the British left. The General Election of 12 December 2019 saw a decisive majority for the Conservative Party, led by Boris Johnson, based on its promise to 'Get Brexit done'. The political damage was worst in Labour's traditional heartlands—the Midlands and the North of England—areas which had returned Labour MPs for decades but which had voted 'Leave' in the Brexit Referendum of June 2016. The Labour Party suffered its worst electoral defeat since 1983, and, with the prospect of a further decade out of office, is faced with answering the question of what went wrong. For many, the size of the majority and the dramatic swing away from Labour in traditional working-class constituencies came as a shock. After all, there was a moment, back in 2017, when it seemed that the political pendulum was swinging once more. The immediate political effect of the 2008 economic crisis was the ousting of Labour from power and a coalition government between the Conservative and Liberal-Democrats, a government committed to implementing austerity. In response to this, the newly appointed Labour Party leader Ed Miliband took up some themes that suggested a leftward turn for the Party.

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[1] Tony Benn served in the Labour governments of the 1970s and was a key figure in the development of the Alternative Economic Strategy that was the basis for the Party's 1983 election campaign. It argued for nationalisation of key industries, the raising of taxation to fund public services and the redistribution of wealth and incomes. The failure of this strategy in electoral terms ensured that New Labour took a decisive shift to the political centre, so Corbyn's return to this terrain in 2017 and 2019 was highly significant.

J. Morgan (✉)
University of Auckland, Auckland, New Zealand
e-mail: john.morgan@auckland.ac.nz

Miliband's defeat in 2015 effectively signalled the end of Tony Blair's New Labour, and led to the election of Jeremy Corbyn, a long-standing member of the left (for assessments of Corbyn and 'Corbynism' see Blackburn 2018; Seymour 2017; Bolton and Pitts 2018). Against all the odds, in 2017 Corbyn's Bennite version of socialism[1] proved popular with the voters (especially younger ones), and, although not sufficient to win the General Election, it did suggest and register a return to issues of class in British political discourse. In 2019, Labour's manifesto provided an analysis, and proposed a solution to, a financialised capitalism that has lost its way (The Labour Party 2019). In its place, Labour sought to return to the themes of the 1980s with its strong case for nationalisation, alternative modes of ownership, increased spending by the state, and taxation of the wealthiest groups in society, along with public investment in a Green New Deal (McDonnell 2018; Blakeley 2019).

Despite education appearing to be a significant issue in the run-up to the general election, Labour's manifesto took a fairly standard line on education, offering critiques of underfunding and selectivity of previous governments and arguing for curriculum that would value equally vocational, academic, technical and creative skills. In the short election campaign, education barely featured. Thus, it seems that we are a long way from knowledge socialism as envisaged in the title of this volume. My aim in this chapter is to explore the current possibilities for the advance of knowledge socialism in one country. This leads to two important caveats. First, I am using the term the 'educational left' to describe a broad 'progressive' front that has sought to critique or challenge the direction of educational policy and practice since the 1980s. Second, the political ambitions I describe seem a long way from revolutionary practice in education. This reflects, I think, the state that we are in, in Britain at least.

What Is 'Knowledge Socialism'?

Under the weight of business ideology, we have grown used to the idea that advanced economies have become 'knowledge economies'. Technically, this relates to the 'discovery' by the Nobel Prize-winning economist Robert Solow (1957) that 'productivity' is the result of both inputs of capital and Labour, but also of a 'residual' that reflects the contribution of technological change and innovation. In the long run, the only way to improve productivity or 'growth' is to invest in technological change and innovation through, say, education. Thus, in a world economy dominated by capital and organised around nation-states, governments seek to increase the nation's ability to be innovative, entrepreneurial and creative. In his book *Knowledge Power*, Wilson (2010) sets out what he calls 'the knowledge challenge':

> All economies-both local and national-function in a highly competitive environment. The 2008–9 credit crunch exposed the fragility of the global economy. Populations are socially polarised-internationally and intranationally. There are significant challenges for public service delivery: health and education, from care provision for the elderly, to provide adequate housing and transport infrastructure. The planning system should sustain good cities. There

are challenges of developing maintaining civilised cultural vitality. We have the knowledge to resolve many of these issues but do not use it. We can create the requisite knowledge. This is the knowledge challenge. It will be met in part through education, research and lifelong learning. (Wilson 2010:1)

Wilson does not need to spell it out: the economies he is talking about are *capitalist* economies. The capitalist knowledge economy is reliant on human capital to encourage innovation and growth. But looking at Wilson's list of problems—financial instability, growing inequality, deficits in social welfare, failing infrastructure, not to mention climate change and resource depletion—it is not clear that KNOWLEDGE + CAPITALISM will solve them. Indeed, it may be that KNOWLEDGE + SOCIALISM is a better bet.

The term 'knowledge socialism' was coined by Michael Peters in 2004 (Peters et al. 2004). It was linked to the notion of Cognitive Capitalism, which theorises how knowledge as a factor of production has the potential to transform the capital–Labour relation and extend human communication in ways that offer different ways of creating and distributing valuable knowledge. In simple terms, the advent of the Internet, of Peer-2-Peer publishing, of blogs and instantaneous communication may offer the potential to imagine and create new practices and cultures of sharing and participation. Since Peters' landmark publication, the modest optimism about the socialist essence in these practices has perhaps faded, reflected in the rise of what some have called 'platform capitalism' (Srnicek 2016) or 'surveillance capitalism' (Zuboff 2019). In particular, the promised transformative potential of the 'knowledge economy' is unrealised in a nation such as the United Kingdom where work has largely remained unchanged (Blanchflower 2019).

Whilst recognising the importance of such work in analysing what is happening at the cutting edge of 'bio-informational' capitalism, my own experience and reading in British political culture inclines me more towards the more pessimistic assessments of work in late capitalism offered by writers such as Andre Spicer, Peter Fleming, Mark Fisher, Nina Power and Ivor Southwood. For example, in *Non-stop Inertia*, Southwood (2010) describes his search for work, surrounded by the ubiquity of digital consumption and the need to be always on. The effect is to divert attention away from wider abstract social or political concerns and onto a continual anxious self-surveillance. This constant precariousness and restless mobility, compounded by a dependence upon relentlessly updating market-driven technology and the scrolling CGI of digital media, together suggest 'a sort of cultural stagflation, a population revving up without getting anywhere'(12).

In response to such 'capitalist realism' (Fisher 2009), where is seems easier to imagine the end of the world than the end of capitalism, it becomes more urgent than ever that we attempt to imagine a socialist alternative. Here, we come up against a challenge: socialist thought has been reluctant to state what a socialist society would look like and how it would work in practice, perhaps because Marx himself had little to say on the subject, devoting his time to understanding the internal logic of capital. There is no blueprint for socialism. However, in recent years, there has been a revival of interest in the possibility of 'alternative economic systems' (Westra et al. 2017)

and practical utopias (Albritton 2019; Wright 2010). In what follows I blend my personal long-standing interest in socialist thinking with the resurgence of interest in the possibilities of 'non-market socialism', that is 'a money-less, market-less, wage-less, classless and state-less society that also aims to satisfy everyone's basic needs of power and resources are shared in just and "equal" ways' (Nelson and Timmerman 2011: 3) as a way of thinking about knowledge socialism. Whilst some readers may be put off by the word 'socialism', freighted as it is with historical resonances, it is useful because it requires us to think about a world in which the capitalist laws of motion are replaced by another logic. There is no historical inevitability at work, and an important set of questions revolve around how the transition to socialism might happen.

In the 1980s, in the midst of a major restructuring of Britain's economy, society and culture, I became interested in the ideas of the Socialist Party of Great Britain (SPGB). The SPGB is the oldest existing political Party that has consistently argued for non-market socialism. It was formed in 1904 out of a split with the Social Democratic Federation (SDF) about the 'impossibility' of ushering in socialism without a complete break from capitalism. The SPGB draws upon Marx and Engels and others who have imagined a money-less, state-less society. It diagnosed at an early stage that the Bolshevik Revolution had led to a situation of state capitalism (Buick and Crump 1986). The transition to socialism would require the growth of socialist consciousness among the working-classes, and the role of the Party was to provide workers with clear-headed analyses of socialist arguments, and persuade them of the necessity and possibility of a society organised 'from each according to their ability, to each according to their need'.

Of course, the growth of the type of socialist consciousness predicted by the SPGB has not occurred, and at least part of the reason for that is that many of us find it hard to imagine life without money, and accept the market as the only sensible and efficient way to allocate goods and services.

However, it is worth remembering that what we now call neoliberalism was itself a response to the possibility of non-market alternatives (Hayek 1945). In the 1920s and 1930s, this had been expressed in the Socialist Calculation Debate, in which liberal economists such as Ludwig von Mises and Friedrich Hayek sought to prove the superiority of the market as a means of price allocation over any system of central planning. The effective victory of that market view, the obvious inefficiencies of central planning in so-called communist societies, and the relative stability of Western social democracy, meant that for much of the second half of the twentieth century discussion of non-market allocation of goods and services was muted or deemed hopelessly utopian (Buick 2011). The SPGB maintained its position though, and in 1987 published a pamphlet—'Socialism as a practical alternative'—written as a response to the challenge to offer a positive statement about how a socialist society might operate in practice (SPGB 1987).

'Socialism as a practical alternative considers' the problem of how to increase global food production and ensuring that the world's population is fed (a major concern in the 1980s, as now). It envisages that a decision to increase food supply would be proposed at local levels, and then approved at regional levels. Existing

data sets and expertise (collected, for example, by official bodies as the Food and Agriculture Organisation) would be available to provide knowledge and information. It explains how a socialist society would provide increased levels of productivity by overcoming the artificial restrictions of capitalism (e.g. forced redundancy or retirement; workers doing socially useless jobs; wastage of technology).

More generally, the SPGB suggests four stages of socialist production. The initial challenge would be to rapidly increase overall productivity, especially in food production and health care to ensure minimally sufficient standards for all. Once that is overcome, the need would be for the development of durable goods and fixed means of production, ensuring the spread of automation and labour-saving devices throughout the productive system. Later stages would include an overall reduction in total production with enough being available to satisfy demand, and eventually, 'zero-growth' to balance stable levels of production with stable levels of consumption. This would make use of non-polluting technology wherever possible, and be geared to meet current needs and repairing and replacing ageing stock. The SPGB is clear that, '[s]ocialism will not go on with the increased production of goods and services for the sake of it. This would be a self-imposed treadmill. We would not follow the example of capitalism where life's objectives are focused on the acquisition and consumption of material things.' (SPGB 1987: 30)

Clearly, this is an attempt to think through the implications of alternative means of social co-ordination and is strongly influenced by the advent of digital communications. The 1987 publication states that modern information technology could be used 'to bring into direct relationship various dispersed but connected parts of world production' and that this would be useful for monitoring the position of stocks, productive capacity and resources.

The capacities and potential of digital technology have been transformed beyond all recognition since 'Socialism as a practical alternative' was published, but what is striking is how the contradictions of capitalism have widened and deepened, and how much technology remains socially useless (think of the time and resources used in designing, manufacturing, marketing, and consuming spent playing digital games or sharing of trivia on social media platforms). Arguments about how advances in technology, notably with the rise of 'Big Data' are supposedly ushering a new era of 'capitalism without capital'—have simultaneously revived the debate about how goods and services might be organised. For example, Eugene Morozov's (2019) review of the prospects for digital socialism points to the ways in which big data offers the opportunity to re-open the 'calculation debate' and discuss how post-capitalist economies might be possible.

Morozov cities Daniel Saros whose 2014 book *Information technology and socialist construction* explores the way in which information technology might allow for the transition to socialism and the development of new socialist laws of motion. Saros describes how data management systems could facilitate the management of demand for goods. He envisages the existence of a General Catalogue—something like a mix between Amazon and Google—where producers, organised in 'workers' councils' offer their list of products and services. Consumers, provided with a unique

digital ID card, consult the catalogue to register their needs during a 'needs registration period' at the beginning of each production cycle. They rank the products they need and the quantity. To encourage consumers to order no more than they need, bonuses are given for ordering fewer items than average consumer. These bonuses are added to the Universal Basic Income that all citizens receive. At the end of the 'needs registration period', producers calculate expected production figures and register their need for parts in the General Catalogue. The council decides on a price to charge, but since they are not set-up to seek profits, their main goal is to use their resources wisely and fully (i.e. rationally).

In relation to the SPGB's account, Saros's account raises many questions, such as, why would production be organised into 'workers' councils' rather than at a more local level? Is there a need to think in terms of 'consumers'? If capitalist relations have been replaced, why is there a need for incomes? However, the point here is that Saros' example enables us to the need to move beyond a narrow technical account of how to coordinate distribution to focus much more widely on the aims and purposes of a socialist society.

A common denominator of both these visions of a socialist society is that they will require knowledgeable people. Indeed, it might be argued that the growing interest in alternative forms of ownership such as co-operatives and Richard Wolff's (2012) 'workers' self-directed enterprises might be seen as part of a growing contradiction between Labour and capital. As a consequence of advances in communications and knowledge economies, workers are likely to have in-depth knowledge of the jobs they do, and management (entrepreneurs) become increasingly redundant. In Marxist terms, whereas workers (the productive forces) are developing better entrepreneurial skills, firms continue to be run by capitalists (the productive relations), raising the real possibility that workers are able to produce and distribution social goods and services without a class of owners.

None of these ideas are likely to be found in the curricula and textbooks of schools under capitalism, simply because such schools are concerned with 'making workers' (Mitchell 2018). Much of what is taught—in the overt and hidden curricula—is ideological and geared to creat a docile workforce and habitual consumers. As I will explain in the next section, socialists have an ambivalent relationship with state education. So much of what goes on in schools, critical pedagogy has informed us, is anti-educational. It would be premature to try to second-guess what socialist schooling would look like, although I would probably follow the SPGB's prediction that teachers of subjects that transmit useless knowledge—Accountancy, Law, Business Studies, Economics—would find something more productive to do. We cannot expect this to be supported through capitalist education.

Moving towards knowledge socialism then, will require engagement with the questions of knowledge and curriculum. As Rachel Sharp wrote in 1980:

> the main goal of struggles over the curriculum is to maximise the possibility of exposing more pupils to a basic analysis of capitalist institutions they inhabit, in a way which demonstrates the intellectual bankruptcy of liberal thought, contradictory nature of its key assumptions, and the quality of the solutions it offers the social ills of our time. (Sharp 1980: 182)

In true Marxian fashion Sharp does not go on to explain what this curriculum will look like other than to say that it will respond to the conjunctural analysis of the wider social forces and the specifics characteristics of each school or educational institution. However, I think the point is made well that knowledge matters in any socialist advance.

High Hopes

British socialists have long had an ambivalent relationship with state education. The development of an urban and industrial society in the nineteenth century was linked to development of a working class which was to be disciplined to know in its place. Schools and education for the working classes were intimately involved in the 'gentling of the masses'. Workers' organisations were sites of intense debate as to the most suitable content and form of schooling for the working class—about what would constitute 'really useful knowledge' (Johsnon 1979). In the 1920s and 1930s, these debates shaped arguments within the Labour Party. R.H. Tawney's (1922) influential *Secondary education for all* reflected what was to become the dominant view of the Labour Party. Thus, Labour's policy is not for the advantage of any single class, but to develop the human resources of the whole community.

This represented nothing less than the subordination of working-class educational interests to those of long-term state policy (Jones 1983). The defeat gave impetus to the right-wing forces within the Labour movement and strengthened the central arm of the Labour Party and the unions. From this point on, the educational left in Britain has been largely concerned with what can be gained from the state education system, working within a tradition that formed part of a wider settlement between capital and Labour after the Second World War. The dominant strand of thought was influenced by Fabianism—the ideology that holds that social change comes about through gradual or incremental improvement in the condition of the working class.

The Labour government elected in 1945 sought to ensure that the educational franchise was extended and that the different types of schools attended by pupils enjoyed 'parity of esteem'. These changes were underpinned by the notion that education was the key to social mobility, and the sociology of education that developed after the War was concerned with 'keeping count' of the Labour government's promises. In the 1950s and early 1960s, education policy was built upon the assumption that the British economy was changing, that the 'managerial revolution' would mean that the bitter class conflicts of the inter-war years would be set aside (Crosland 1956). The economy would require larger amounts of skilled Labour, and there would be a need for upskilling. This was an era of economic expansion and growing affluence, and in 1964, a new Labour government was elected with a promise to provide a new system of comprehensive schools, based on modern methods of teaching and

learning and curriculum innovation, and educational technology. New school buildings, the expansion of university education, and the requirement for more and better trained teachers, bolstered by developments in educational psychology meant this was an optimistic time (Vaizey 1962).

The political-economy of educational modernisation was underpinned by the notion of corporatism, which was a recognition that the state should play a role in mediating the tensions between capital and Labour. Teachers were part of the 'inner circle' of state workers who were trusted with the goal of improving the nation's stock of human capital. However, the settlement upon which this educational expansion was based started to falter as British capital faced falling rates of profit from the mid-1960s. In response, the state sought to reduce capital spending, and to redraw the terms of its agreements with its 'inner circle' of welfare workers (including teachers). The Labour government responded to the challenges posed by the restructuring of capital in the 1960s by seeking to implement to bring about changes in organisation and administration of social welfare. These were evident in the reforms to education in the 1960s and 1970s. However, whilst enacted for 'the people' by a Labour administration, these reforms made little attempt to involve working-class people and communities in decisions relating to schooling. Thus, the idea persisted that state education as an imposition and the raising of the school leaving age having the practical effect of taking children out of the workforce and thus unable to contribute to the family wage.

As the economic strains of the 1960s tensions developed into full-blown crisis in the early 1970s, capital responded and the state took a right turn. By then, a critical literature had emerged in Education Studies, and read by new teachers being trained in the training colleges. Though the extent of student radicalism and the meaning of '1968' is debated, the context was one in which radical ideas surfaced and circulated. Thus, many of the assumptions of the policies which gave rise to the welfare state were being challenged, notably in terms of their assumptions around gender and ethnicity (see London to Edinburgh Weekend Return Group 1980). In education, the compensatory schemes proposed in the Plowden Report (1967) for children from deprived backgrounds were questioned by Basil Bernstein's (1969) insistence that '[e]ducation cannot compensate for society'. As economic conditions worsened, a distinctly Marxist analysis of education emerged, prompted by the publication in English of Louis Althusser's essay 'Ideological State Apparatus' (Althusser 1971). Optimism about the prospects for progressive change through schooling was replaced by acceptance about the role of the state in maintaining ideological control (e.g. Dale et al. 1976; Bowles and Gintis 1976; Whitty and Young 1977).

The educational developments of the mid-1970s heralded a greater degree of state involvement in the content of the curriculum, linked to the perceived requirement to respond to the 'needs of industry'. Many on the educational left adopted Antonio Gramsci's pithy aphorism, 'pessimism of the intellect, optimism of the will' in order to emphasise the importance of struggle, resistance and contestation of the dominant meanings of schooling. In the event, this optimism was misplaced as the social democratic settlement crumbled and was replaced by first, Thatcherism, and later, neoliberalism.

The Educational Left and the Crisis Last Time

If, as Stuart Hall (1979) wrote, it was clear that progressive education was dead, then how did the educational left respond? Here, I identify three responses that have fed into the different strands of 'left' educational thought discussed in the final part of the chapter.

The first response was that taken in cultural studies where a series of texts examined how young people experienced a qualitative shift in the nature of the transition from school to work. Between the mid-1970s to mid-1980s, education became less a case of 'learning to labour' (Willis 1977) and more one of 'schooling for the dole' (Bates 1984). The transition from school to work was breaking down, resulting in urban unrest, unemployment and social conflict (e.g. Cockburn 1987; Hollands 1990).

A second response was a wholesale re-evaluation of the project of state education. For instance, James Donald (1983) questioned what he regarded as the complacency of the educational left. This included an acceptance of the tenets of progressivism, which tended to ignore its roots in a sometimes-rigid developmental psychology, and which could lead to an anti-intellectualism by leaving students in their own experience. And that the left's analysis of comprehensive schooling had stopped at the question of access, and 'did not really tackle the question of how to establish a comprehensive literacy of a common yet heterogeneous culture'(28).

With hindsight, it is possible to see that, in schooling, the socialist project was challenged by a number of factors. These included: a generational shift in which a new generation of teachers who had grown up with the mass media and consumer culture were inclined to have a less defensive and more celebratory view of market culture; the popular belief that society had changed and was becoming increasingly open and classless, with a marked change in gender, sexuality and ethnicity; the growing acceptance and celebration of the benefits of new technologies, which promised to bring with them new ways of consuming, working and communicating; and finally, the sense that socialism was a failed project and increasingly irrelevant to the more optimistic freedoms associated with the market.

A third response from the educational left in 1990s came from those 'curriculum modernizers', who attempted to explore the implications for education of the shift from Fordist to post-Fordist systems of production. Though post-Fordism originated in systems of production, it had a much wider cultural impact. The shift from mass production and mass consumption to batch production and niche consumption offered the potential for workers to be involved in the process of production. The emphasis, according to this view, was now on quality, with high levels of technology, and a more skilled workforce equipped to iron our glitches in production and bring about improvements. More crucially, many of the hardened blockages of production around types of skill and the gendered nature of work were thought to be breaking down, with new opportunities for engagement and participation. The Fordist 'job for life'

was now becoming a 'job for the life of the job', and the ideal-typical post-Fordist worker was flexible and adaptable, armed with the ability to become a shape-shifting portfolio worker.

The educational left was only one part of the field of Educational Studies. Indeed, the broad thrust in British educational studies since 1980s has been away from the sociology of class. In 1979, the psychologist Michael Rutter and colleagues published a seminal book based on research in London schools called 15,000 h. It purported to show was that schools which had very similar intakes of students were able to produce significant differences in educational output or attainment (Rutter et al. 1979). These schools were shown to be 'making a difference' through factors that were internal to the school. The question therefore became around school effectiveness—what were the organisational features that could be shown (i.e. were statistically significant). Unsurprisingly, this research was seized upon by governments keen to show that their investments in education were resulting in improved outcomes for students (Slee and Weiner 1998).

Sociologists of education were in a weak position in relation to these developments. In a context where the 'death of class' was widely announced, the sociology of education, loosely linked to wider currents of left thought, abandoned class and particularly neo-Marxist theories of schooling, and increasingly focused on critical policy analysis (often influenced by the work of Michel Foucault). A progressive veneer was maintained through the expansion of studies to include gender, race, sexuality and disability. The focus was on difference and a ready publishing field was found within a globalising Cultural Studies. By the late 1990s, when it became clear that social class could not be discounted, the field saw a return to the cultural study working-class experience, often using the work of writers such as Pierre Bourdieu to illustrate the processes of production and reproduction within schools (Munt 2000; Reay 2016). Conspicuously absent from many of these accounts was any focus on theorising the nature of capitalist economies, so that, when the global financial crash of 2008 happened, there was little immediate commentary from British educationalists.

For many on the 'educational left' in Britain, the General Election result of December 2019 is the latest in a long run of political defeats that started in 1979. By the mid-1980s, the radical right had exposed the weaknesses of social democratic schooling and embarked on a series of reforms that would reshape not just the organisation and provision of education but redefined its aims and purposes. Over almost four decades, the educational left has been unable to effectively challenge the idea that schools must prepare students for a harsh, competitive economic future, and has largely contented itself with ensuring that a dramatically restructured working-class gains its fair share of access to schooling and higher education. This limited ambition means that, in the face of capitalism's deepest crisis since the early 1970s, there has been little attempt to examine the content of a socialist educational strategy. The final part of this chapter identifies five distinctive approaches on the 'educational left' and considers their stance on questions of knowledge. It is hoped that this exercise can help to sharpen our thinking on how we might move towards 'knowledge socialism'.

Mapping the Educational Left in Britain

The Mainstream Educational Left

The mainstream left offers a critique of the right's educational agenda since the mid-1970s, with its attacks on equality of opportunity and child-centred progressivism. It points to the fact that the emphasis on markets and choice has not led to better outcomes, and argues that teachers have in many ways 'lost control of the classroom' (Lowe 2007). It argues that teachers' work was recalibrated so that they were to be disciplined deliverers of prescribed curricula and assessment, suffering a significant loss of status and autonomy. Despite increases in the total volume of education provided, and improvements in school examination results, there remain substantial differences in opportunity based on class, poverty and ethnicity, and these have altered little over the entire period.

Thus, over almost three decades, Conservative educational policies have changed mentalities and values, and have achieved some degree of popular support, so that many people are persuaded by arguments about the superiority of market provision. This puts the Labour Party in a contradictory position, as was evident in the new Labour years of 1997–2010 when the government effectively operated the policies of the previous Conservative administrations. Mainstream educational thinking on the left veers between calling for a return to the unfinished project of comprehensive education and recognising the realities of a mixed economy in schooling.

The mainstream educational left is relatively silent on questions of knowledge and curriculum, other than to say that all students should be taught to a high standard and have access to the curriculum, which should be based on a sensible mix of 'academic', 'vocational', and 'social' approaches (e.g. Benn 2011). For the mainstream educational left, knowledge socialism is not on the horizon, its goal seems to be to secure a fairer, more equitable capitalist schooling.

The Critical Educational Left

The critical educational left provides a sharper analysis of the educational policies of the past four decades. Whilst accepting much of the mainstream left's critique of Conservative schooling, it locates it more explicitly to the needs of capital in a neoliberal society. This analysis stresses the role of the state in providing education, and how, in response to the crisis of the 1970s, neoliberalism was used as the strategy to reduce costs and ensure that schooling more closely mirrored capital's requirements. In the process, older social democratic projects that stressed the importance of working-class experience or the combating of racism and sexism were challenged, and a 'back-to-basics' curriculum was installed. The outcome was an

exclusive schooling system in which students find that their own experiences and identities are not valued or recognised in the curriculum. The school serves to value and distribute certain forms of cultural capital.

In order to challenge this, a critical pedagogy is required; one that recognises and makes use of the forms of capital possessed by individuals and communities. This would form the basis for the curriculum of the 'Common School' (Moss and Fielding 2008). Such critical pedagogies value and recognise the social locations of oppressed groups. Knowledge and curriculum matter, since there is a need to deconstruct dominant versions of the curriculum. In this account, knowledge tends to reflect the social context of production, so that knowledge is powerful, it reflects the interests of powerful social classes and groups and should be countered with a 'standpoint' curriculum that recognises the role of power in shaping dominant understandings of the world (Au 2018). The problem with such an approach is that unless it can connect to the underlying mechanisms of capitalist political-economy, it risks focusing on the politics of difference.

The Communitarian Educational Left

Both the mainstream and the critical educational left see the development of universal state provision of education as a pivotal achievement of modern democratic societies. However, as suggested earlier, its offer has not always been welcomed. An alternative perspective is found in the writings of those who argue that British politics is 'moving in a post-liberal direction, rejecting the economic and social liberalism that has been dominant for the past four decades' (Pabst 2017:500). This is a direct consequence of the 2008 crisis, which gave rise to Blue Labour.[2] In the Blue Labour analysis, the Labour governments from 1997 to 2010 had too readily embraced globalisation, the 'new' and the market, and, as result had lost touch with the Party's roots in the industrial past and in the English notions of the 'common good'. This became evident in the Brexit referendum of June 2016, which has been explained in terms of a growing divide between the 'somewheres' and the 'anywheres' (Goodhart 2017), where those most prone to the faceless and de-stabilising forces of economic change have been 'left behind'.

It is not difficult to see how in education, the reforms of the past few decades have encouraged educators to adopt an abstract and jargon-filled language, full of targets, measurable outcomes, effect sizes and value-added. Both the state and the market are experienced as alien impositions, out of kilter with older, settled 'ways of life' and in many cases actively eroded by them. Milbank (2013) argues that it is 'little short of incredible' that most so-called left-wing, radical thought actively accepts

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[2]Blue Labour is a loose grouping around the Labour Party which emerged after the electoral defeat in 2010. It explained Labour's defeat as a logical outcome of the governments of 2007–2010 to embrace globalisation and the market, and to favour the new over tradition. As a result, Labour lost the confidence, and eventually the votes, of its traditional working-class constituencies.

and promotes the almost uncontested assumption that the state should organise most of the educative process. Milbank and Pabst (2017) propose a series of alternatives. These include: placing collaborating universities in charge of local schools according to region, so as to ensure that decisions are made on educational rather than political grounds; place schools under the control of teachers, parents, the local community and governors, mediated by local educational associations; turning schools into 'village colleges', offering all-through age education, training and life-through learning; abolish all national curricula, whilst enhancing the professional status of teachers to attract higher quality people than at present; ensure that educational choice between the academic and the technical is made as late as possible; end the misuse of digital technology, which is destroying the autonomy of teachers and the creativity of students; and reverse the invasion of educational spaces by the Internet.

In terms of knowledge and curriculum, communitarian would seem to reject the globalising pedagogies of competences and digital skills, and seek instead more authentic, local forms of teaching and learning. It is possible to imagine both 'progressive' and 'reactive' versions of the communitarian curriculum. On the one hand, the emphasis might be on the study of local history, geography and ecology, and the development of skills required for self-sufficiency. On the other hand, such a curriculum could become inward-looking and defensive, seeking to restore a lost order.

The Left Modernisers

Diametrically opposed to the 'post-liberal' vision of Blue Labour is that associated with left modernisers. This strand of left analysis has gained momentum in the decade since the global financial crisis (Jones and O'Donnell 2017). According to left modernisers, any successful strategy for the left must mean rejecting the individualism that is promoted by neoliberalism, and at the same time, avoid falling into the trap of communitarian conservativism. Two leading contributors to this discussion, Gilbert and Fisher (2016) point out that the British left's greatest successes came at a moment when it most fully embraced and engaged with the cutting-edge sciences of manufacturing, communication and management. Thus, the high points of nationalisation and large-scale Fordist factories provided the basis for raising aspirations, the advances of affluence, and it might be added, the educational expansion of the post-war period, all of which benefitted British workers. Their conclusion is that socialism has only been able to find the energy and the tools with which to develop a successful political programme when it has understood itself as a modernising force, working with the grain of technological and organisational processes, even whilst it works to dismantle the class relations that sustain capitalism. Technology will play an important role. Although under current arrangements technology tends to trap us in the form of the 'networked individual', this is in fact only one of its possible uses, and the challenge to use technology to create what Gilbert calls 'potent collectivities'

in which technology is used to connect with other people, and build solidarity within and across institutions.

The left modernisers' argument shares some aspects of the 'accelerationist' thesis, which insists that the left should abandon any attachment to localism or primitivism and embrace the dream of a future in which the automation renders all but the most minimal quantities of human work redundant (Mason 2015, 2019; Srnicek and Williams 2015). For some, the goal should be 'Fully Automated Luxury Communism' (Bastani 2019). Overall, left modernisers suggest that changes in the nature of production associated with the rise of platform capitalism and post-capitalism hold the potential for new forms of networked identities and socialised forms of living and working. It suggests an educational practice that embraces novelty, innovation and a 'future-focus'. An indication of what this might look like in the UK context can be found in the centre-left think-tank Compass' inquiry into a New System of Education which argues for Big Education which calls for an education system that can allow people to be 'carers, conservers, co-operators, innovators and citizens' (Compass 2018).

The Social Realist Left

One final version of left thinking in education can be found in the work of 'social realists'. Social realism can be seen as a counter-reaction to earlier work in the new sociology of education which held that knowledge is a social construction and that the school curriculum tends to offer a view of the world that reflects powerful interests. This view of knowledge (which comes close to that adopted by the 'critical left') offers the chance of educators changing the world through changing what (and how) they teach. Moore (1996, 2004), taking his cue from Bernstein's comment that 'education cannot compensate for society', rejected this argument, suggesting that knowledge has its own autonomy, and that educational change is the result of wider social changes, not pedagogical ones. Subsequent work (e.g. Young 2000) has sought to show that knowledge is at once a social product but has a reality that goes beyond its conditions of production. This knowledge is powerful because it enables students to transcend their own experience and contexts. In a context in which we lived in 'the schooled society' (Baker 2016), the proper concern of socialists should be to ensure that this powerful knowledge is made available to all students.

Though social realist approaches originate from debates on the educational left, they have been accused of seeking to restore the 'conservative', traditional curriculum and of down-playing the significance of other sociological relations of schooling. Perhaps most crucially, social realism has, so far, been unable to answer the question of 'what is to be taught', or, what would constitute a socialist curriculum.

The Way Ahead

It is becoming increasingly apparent that capitalism is in retreat. Rates of economic growth have not returned to their pre-2008 levels, and economists talk seriously of the prospect of secular stagnation.[3] The post-crash policies have seen the gains from any growth (often funded by central banks printing money) being swept up and squirreled away by the already-wealthy. Best-selling economics books talk of the return of the 'gilded age'. Meanwhile, austerity stretches the fabric of society increasingly thin, and young people are told to keep calm and go to college. For the lucky ones, The Bank of Mum and Dad is the 'lender of last resort'. Precarity has become generalised. All this before we add the spectre of a world that appears unable to halt the climate emergency.

Education is in need of a rethink. Whilst the definition of knowledge socialism remains unfixed, it is a useful concept with which to measure the extent to which the educational left is making progress towards engaging with socialist and/or post-capitalist alternatives. The educational left should engage openly and fully with arguments about knowledge and curriculum. We need to measure our work in terms of how far we help students to envision and imagine different futures. Knowledge Socialism may be one concept that helps us to rethink.

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[3]Secular stagnation refers to long-term fall in the rate of economic growth, as opposed to cyclical stagnation. Originally coined by economic Alvin Hansen, it gained increased prominence in 2013 when the former US treasury secretary, Larry Summers, addressed the International Monetary Fund and warned that the global economy may be facing the prospect of secular stagnation.

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John Morgan is Professor of Education and Head of School of Critical Studies of Education at the University of Auckland. Prior to that, he worked as a geography educator at the Institute of Education (London) and University of Bristol. His most recent book is *Culture and the political economy of schooling: what's left or education?* (Routledge 2019).

Chapter 13
Locating and Diversifying Modernity: Deconstructing Knowledges to Counter *D*evelopment for a Few

Greg William Misiaszek

Introduction

If education, in/outside of schooling, is for 'development' (or 'progress'), 'who' and 'what' are included in 'development' goals? Discussed will be how certain knowledges and ways of knowing, and the selection in teaching them, construct what is 'development' within framings of *modernities* that affect socio-environmental in/justice and planetary un/sustainability. In this chapter, the term modernity will be utilized both as its theoretical foundations, described throughout this chapter, and the tangible processes of modernizations. Through ecopedagogical analysis, I will problematize how constructs of modernities affected by globalizations have led to a contested terrain of either teaching for dominant,[1] oppressive development that benefits a few or globally holistic development that is also contextually diverse and environmentally sustainable.

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[1] Globalization*s*, plural to indicate the processes of globalization forming contested terrains of conflictive roles leading towards in/justice or un/sustainability (similar to other pluralized terms in this chapter) (Torres 2009a, 1999; Kellner 2002), result contextually in either development or de-development.

G. W. Misiaszek (✉)
Beijing Normal University, Beijing, China
e-mail: gmisiaszek@gmail.com

Paulo Friere Institute UCLA, Los Angeles, USA

As pedagogical scholars—as teachers, producers, and legitimizers of knowledge(s) and ways of knowing—a key question is how knowledge(s) for 'development' and 'modernity' is constructed and taught, as well as who we 'include' and 'care about' in touting these terms?[2] Within environmental/planetary concerns, these questions are planetary in scope, as Earth is viewed holistically. I will problematize how can globalizations *from below* amplify/reinvent help teach globally inclusive and sustainable 'development', as well as their groundings of modernity.

Throughout this chapter, I will utilize *knowledge socialism* constructs to counter, disrupt and the radically reinvent *knowledge economies* and *knowledge capitalism* framings that suppress knowledges and ways of knowing (i.e., epistemologies) for few to profit and entrenching 'development' as self-profiteering without concern for others (i.e., 'our' profit on the backs of 'them'/nature). In simpler terms, disrupting knowledge systems and associated teaching in which caring for each other or the rest of nature is absent, but rather 'our' power over and profiting from 'them' is singularly valued, as well as dominating and consuming the rest of Earth towards this goal. Learned constructions of 'us' versus 'them' will be problematized through and between theories of modernities, development, globalizations, citizenship*s* and neo/coloniality.

I will analyse the political withholding of knowledges within the academy as it affects knowledge production/legitimization, higher education teaching and the public sphere in conceptualizing 'development' and 'modernization' with or without socio-environmental justice and planetary sustainability. In other words, how does academic selection and condensing of knowledges through/from certain epistemologies coincide or counter capitalistic/neoliberal tenets that make socio-environmental peace and sustainability nearly impossible? There is the larger question that if we understand the world (all humans, all human populations) and larger Earth (all of nature, including the world) through collective knowledges, including the determination of what is 'true' and 'false', how do we misunderstand the world and Earth with limitations of economics and overall hegemony as controlling access, depth and width of knowing (Misiaszek 2020)? This leads to questioning if knowledges are shared for each other's development and sustainability (aligning with 'sustainable development'), or is the legitimization, access and epistemological foundations limited to continuing hegemony and the inherent connections to socio-environmental devastation and planetary unsustainability?

Ecopedagogy and *d/D*evelopment: A Brief Introduction

I have written various publications ecopedagogy and *d/D*evelopment that this chapter's space does not allow, but I offer the following passage on how I previously described both.

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[2]The term 'we' here, with myself included, are pedagogical scholars which will be indicated specially throughout this chapter; with other references to 'we' as human beings overall.

> [Ecopedagogy:] Rooted in critical theories, originating from popular education models of Latin America and reinventions of the Brazilian educational scholar Paulo Freire's work, ecopedagogies are transformational environmental pedagogies centred on ending socio-environmental injustices. Although ecopedagogies have multiple definitions, they are all grounded in critical thinking and transformability to construct praxis within social-environmental justice models (Gutiérrez and Prado 1989; Gadotti and Torres 2009; Gadotti 2008; Kahn 2010). Ecopedagogies' overall goal is for students to critically understand how environmentally harmful acts lead to oppressions for humans (anthropocentric aspects) and all else that makes up Earth (biocentric aspects), the politics of the acts, and how to problematize the acts to end socio-environmental oppressions. (Misiaszek 2018: 9)

> [_d_/_D_evelopment and ecopedagogy:] four defining factors of es_D_ [and _D_evelopment (capital and italicized '_D_')]: (1) neoliberal economics as the sole factor of development analysis; (2) deprioritizing economic justice concern by ignoring how development processes sustain/increase hegemony; (3) deprioritizing planetary sustainability for Earth's balance; and (4) local framings of development are disregarded for globally constructed ones 'from above' (e.g., Western _D_evelopment models), denoted by the lower-case, underlined, and italicized '_d_'. (Misiaszek 2019a: 16)

> I utilize the lower-cased _d_evelopment and upper-cased _D_evelopment to indicate, respectively, empowering versus oppressive, holistic versus hegemonic, just versus unjust, sustainable versus unsustainable, and many other opposing framings of who is included within "development" and framings of _d_/_D_evelopment goals. There are no absolute origins or framings differentiating between _d_/_D_evelopment, but rather the essence and outcomes of their framings … Constructs of _d_evelopment that counters growth towards and emergent from _D_evelopment. (Misiaszek 2020)

Problematizing economic goals in framing development as they distance social justice and planetary sustainability is essential in ecopedagogical work, with economic justice and neoliberal goals as endpoints of an economics continuum (Misiaszek 2019a: 2018).

Ecopedagogies with knowledge socialism requires intellectual problematizing how economics can be the former rather than the latter goal. Throughout my work I have argued that environment violence is most frequently taught as justifiable by _distancing_ (e.g., geographically, socio-historical othering, timewise) environment violence from social violence, as well as the World with the rest of Earth (Misiaszek 2011, 2018, 2019a, 2020). For example, distancing the Amazon's destruction as not affecting 'us'—with the accompanying coloniality, racial, xenophobia, etc.—in the name of _D_evelopment outside of the Amazon region. Another example is climate change, outside of absurd denial, as not affecting 'us' through time-distancing (time range is often falsely lengthened) with accompanying blind-faith of future technological advance that will not only slow/end global warming, but also reversal of the possibly already passed tipping point.

Knowledges, Economics and Neoliberalism

Ecopedagogical work must disrupt such distancing and _D_evelopment. Disrupting neoliberalism is foundational to ecopedagogical work, including modernities that

ground and legitimatize them. Michael Peters has problematized the 'politics of the "learning economy" and the economics of forgetting that insist new ideas have only a short shelf-life… focus[ing] on efficiency and turning a profit' (Peters 2019: 5). Goals of ecopedagogical praxis are inherently radical in disrupting and reinventing development *with* economics within local to global social justice models and planetary sustainability through deepening and widening socio-environmental understandings (Misiaszek 2018, 2019a; 2020). The narrowing and 'forgetting' of emancipatory knowledge, especially profit for 'distant' others to sustain/intensify hegemony through *D*evelopment, opposes ecopedagogical tenets. A key question of knowledge socialism with socio-environmental knowing and 'not knowing' is how ecopedagogical work can lead to 'seeking a social democratic alternative to constructions of the neoliberal knowledge economy that respects the collective and public dimensions of knowledge as a symbolic social good' (Peters 2019: 18).

In a chapter written with Carlos Alberto Torres and Lauren Ila Misiaszek (née Jones) for a book on universities' roles in the public sphere, we wrote the following focused on ecopedagogy as one of five generative themes[3] to 'follow the Freirean practice of developing themes through cultural synthesis, or thematic investigation':

> By limiting access and equality because of the perceived need to increase profits, education constructs a sense of fatalism in which commodified knowledge is the limited situation rather than knowledge for transforming society being given value (Freire 1985)… Without critical and dialectic perspectives (which are tenets central to ecopedagogy) on environmentally devastating acts, the academy becomes a tool to help sustain hegemony rather than to transform society. Challenges to neoliberalism have been made on many fronts, and the institutions of higher education are not an exception… it is important to go back ad fontes and to recall that institutions of higher education were conceived as places (albeit fairly elitist ones) for the pursuit of reason, argument, knowledge production and implementation, and the betterment of the human condition. (Misiaszek et al. 2011: 185–186)

We, as the authors, connected higher education's central role, although often deprioritized, of 'the betterment of the human condition' by critical teaching of environmental violence (2011); as I argue here for knowledge socialism with ecopedagogy as a tool of violence disruption—knowledge production, legitimization and distribution/access linked to economic ideologies justifying environmental violence. Such disruption, or 'approbation' as used by Peters, is more needed with intensifying globalizations, as 'economic logic links science to national economic policy, while globalized multinational science dominates an environment where quality assurance replaces truth as the new regulative ideal' (Peters 2019: 3–4).

Ecopedagogical teaching and reading of *d*evelopment is progress/growth that is locally to globally collective, within Earth's balance. Collective *d*evelopment counters Eurocentric modernity as Grosfoguel described below:

> …social private and its institutional non-state public authority are not in contradiction with personal/individual liberties and collective development. One of the problems with liberal

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[3] (1) Freedom Is Emancipation, Not Tutelage, (2) Anti-Hegemonic Globalization, (3) Defence of the Public Good in Higher Education, (4) In Defence of the Democratic State, (5) Planetarian Multicultural Citizenship.

and socialist discourses is that the state is always the institution of public authority which
is in contradiction to the development of an alternative 'private' and 'individual' growth.
(Grosfoguel 2008: 20)

Prioritizing individual profit within Western modernity, especially within neoliberal
frameworks that only prioritizes the self's private sphere (Postma 2006), devalues to
nil the public sphere and, thus, counters all-inclusive _d_evelopment. As the planetary
sphere is the largest metaphorical 'public sphere', nature is without value within
_D_evelopment unless nature can be commodified (Misiaszek 2018, 2019a, 2020).

In many ways, this chapter continues to reinvent the work of Gert Spaargaren and
Arthur Mol (1992: 327) who focused on modifying theories of ecological moderniza-
tion with 'the changing role of nature as "intuited nature" and the way people "deal
with" these aspects of the environmental crisis within everyday life', beyond the
work of Joseph Huber who 'analyse[d] the institutional reforms required for bringing
human interaction with the sustenance base under rational ecological control'. This
links 'nature as a sustenance base [as] relat[ing] to the character of modern society'
with particular critical focus on 'whether capitalism or industrialism is the major
factor behind the environmental crisis'. Within ecopedagogical spaces this is not a
debate, but rather 'how?'—with particular attention the answers of 'how' as framing
'development'.

Globalizations and _d/D_evelopment

Ecopedagogical work critically problematizes globalizations' effects on the connec-
tions between 'modernization' and 'development', including their endpoint(s) and
processes towards them (Torres 2009; Arnove 2007). Education for development
within ecopedagogical framing should be utopic in teaching for possible futures
building on current/previous progress.

Plurality: Futures, Knowledges, Modernities
and Globalizations

I would argue that a key question of globalization is if multiple, contextual possibili-
ties of the future are more or less 'attainable' in its processes. The plural term futures
indicate non-fatalism with many possible futures rather than a singular future within
globally dominant _D_evelopment, with coinciding importance in the term knowledge
socialism as indicated by Peters (2004) introducing the term within his article enti-
tled 'Marxist _futures_: knowledge socialism and the academy' (journal's double-issue
theme). Aligning with this the pluralization of modernities in this article's title, I am

referring both to agreement of the following statement by the environmental peda-
gogical scholar Lucie Sauvé (1999) and modernities with prefixes before the term
that counter/reinvent them (e.g., post-modernism, transmodernity).

> Speaking very generally, modernity is characterized by its belief in progress associated with
> the explosion in scientific knowledge and the promises of technology. It is a crucible for the
> development of major unifying theories and the search for major organizing principles (the
> '-isms,' including communism, liberalism, capitalism and others) which convey universal
> values. Modernist epistemology is positivist; it is based on a search for objectivity and relies
> on instrumental rationality to legitimize knowledge and to organize it into separate disci-
> plines. Modernist ethics are anthropocentric and the only limit on freedom of the individual
> and the enterprise is respect for the freedom of others. (Sauve 1999: 10–11)

The universality of the following statement, I argue, must be radically challenged
within the contexts of an increasingly globalized world, '[m]odernity belongs to that
small family of theories that both declares and desires universal applicability for
itself' (Appadurai 1996).

This pluralization indicates possibilities to counter fatalism without alternatives
of development, the linearity of development, as singular in its endpoints and
processes, must be problematized. Thomas Kuhn's (1970) arguments of progress
as paradigm shifts can be extrapolated as linear from stepwise progress. Globaliza-
tions constructing modernities that universalize development's endpoints without
concern for planetary sustainability are inherently countered by ecopedagogical
work. Development within an increasingly globalized world must challenge how:

> [i]n the second half of the twentieth century, development became a code word for not wanting
> to be left behind in a world of rapid discoveries and changes… For modernity connotes the
> charmed circle of progress, sophistication, growth and completeness. But development is
> not simply a process of improving the lot of a nation. (Lee 2005: 67)

Raymond Lee (2005) argued that such linear progress does not allow for disrupting
previous and current progress for reflectivity and possibilities of radically trans-
forming what 'development' should be, especially within global capitalism. This
includes what epistemological framings solidify *D*evelopment and linear processes
towards it. Disrupting such linearity will be the focus of the next subsection.

Ecopedagogical work is essential to disrupt global epistemological dominance
leading to oppressions and planetary unsustainability (Misiaszek 2018, 2019a; 2020).
Epistemologies of the North, as Boaventura de Sousa Santos (2018) notes, are rooted
in capitalism, coloniality and patriarchy, and do not allow for deepened and widened
reflectivity within socio-environmental justice and planetary sustainably to further
entrench *D*evelopment. Opposingly, *Epistemologies of the South* counter such 'devel-
opmental' linearity, thus stopping/pausing the blindness 'push ahead' without critical
reflection or protest. For *D*evelopment to succeed through globalizations *from above*,
knowledges and ways of knowing must fall in line by suppressing epistemologies of
the South and globalizations *from below* that may legitimize and distribute them.

Lee (2005) argued for non-linearity through Giddens' terminology of the 'discontinuities of historical development' (1990: 4), which I would word as teaching through contextual non-linear _d_evelopment thru countering _D_evelopment's linearity. Santos' (2018) epistemological arguments of epistemologies of the North sustaining _D_evelopment grounded in socio-historical oppressions are inherently countered by epistemologies of the South. Thus, _D_evelopment and globalizations from above must be taught and read through epistemologies of the South because epistemologies of the North foundationally validate the linearity.

Ecopedagogies: Disrupters of Linear _D_evelopment

As indicated by disrupting epistemological dominance, ecopedagogical work inherently disrupts development's linearity, through problematizing modernities' effects of global _D_evelopment on local and individual levels for praxis towards _d_evelopment. Freire's first chapter of *Pedagogy of the Oppressed* (2000) interrogated why 'success' is measured by how many people (i.e., the 'them') are beneath 'me'/'us'. Within such individualized 'success' as development, non-linearity helps to counter zero-sum linearity towards a utopic holistic success. A key question is what modernities, or reinventions of modernities, are necessary for such reflexivity about successes, and failures, along with the world and rest of Earth?

Deconstructing globalizations' effects upon the World's collectiveness, world-Earth connectedness, and 'our' associated responsibilities is essential in ecopedagogical work on _d/D_evelopment. If 'power', and accompanying success, is measured 'by the speed with which responsibilities can be escaped' (Lee 2005: 66) as argued by Bauman and Tester (2001), possibilities of justice and sustainability become nil, with 'escaping' goals leading to ignoring responsibilities towards such ends. Arguably, this could also lead to escaping responsibilities of countering injustices and unsustainably, leads to untethered _D_evelopment.

Relating back to knowledge socialism is what Peters and Tina Besley (2006) have termed *knowledge cultures* as 'refer[ing] to the cultural preconditions in the new production of knowledge and their basis in shared practices, embodying preferred ways of doing things often developed over many generations… [as] cultures develop different repertoires of representational and nonrepresentational forms of knowing' (Peters 2019: 3). Ecopedagogues problematize how globalizations can be utilized to 'know' the world-Earth through diverse, bottom-up ways of knowing, especially with emphasis on possibilities to reinvent technologies for ecopedagogical praxis (see Kahn 2010). Such work problematizes the quote below on Western pervasiveness, including epistemological dominance and invasion: '…modern/colonial capitalist/patriarchal world-system has privileged the culture, knowledge and epistemology produced by the West (Spivak 1988; Mignolo 2000). No culture in the world remained untouched by European modernity.' (Grosfoguel 2008: 16)

*d*evelopment *with* planetary sustainability cannot emerge from 'closed' systems as framing knowledges economies (or economies of knowledge) but rather radically 'open' ones, with ecopedagogies aligning with, as Peters (this book) termed 'radical openness' for collaboration and creativity, especially with globalizations from below fueling 'the era of 5G networks, there are still opportunities for full public knowledge, learning and publishing platforms that are, if not owned or subsidized by the state, at least strongly regulated in the interests of public good science'; however, Peters also warns that this might not be always the case. I would state that this later warning would arise without ecopedagogical countering of globalizations *from above* and *D*evelopment.

Jeff Malpas discussed this within technologies that are becoming increasingly complex.

> To recognize the inevitability of failure is to recognise the essentially limited character of human life and activity. The refusal of such limitation, and the assumption of the ever-present possibility of success, is, I would argue, one of the key features of modernity. Modern technology, in particular, presents itself as a source of solutions, rather than of problems, and technological development appears as a steady progression—a process of 'continuous improvement', as the language of 'quality management' would have it. Yet as technological systems become more complex, the failure of those systems becomes an increasing problem. (Malpas 2018: 64–5)

Ivan Illich, often considered the grandfather of ecopedagogy from his last chapter of *Deschooling Society* (1983), argued that without critically problematizing technological advances we become playthings for planners, scientists, engineers, and planners. If complexities of technologies guide the measuring of what is success and livelihood, how are modernities defied through such technological 'development'?

Returning to the discussion on linearity, how can such linear advancement be critical 'creative destruction' rather than positivistic—viewing these as Freire-termed (2000) *limit situations* to guiding *generative themes* on selecting/reinventing modernities? Here also, Kuhn's (1970) paradigm shift arguments are important. Parallel problematizing is essential, probably even more so, on humanization and planetarization of technological paradigm shifts. For example, the Internet, without a doubt, is a paradigm shift. How can we reinvent it towards ending socio-environmental violence and unsustainability—as argued as essential by many scholars (Kellner n.d.; Kellner and Share 2007; Fuchs 2009) and ecopedagogical scholars specifically (Kahn 2010; Kahn and Kellner 2006; Misiaszek 2018, 2011).

Liquidity and Transmodernity

Almost twenty years ago, Bauman (1998: 65–66) argued '"globalization" [as] nothing more than a totalitarian extension of their logic on all aspects of life', with the guidance of borderless, liquid markets. Through such globalization, 'development' goals are entrenched by global consumption, largely without limits or ethics

and manipulated by a few benefiting from _D_evelopment. Accompanying this is the rise of global knowledge-based economies that have liquified production and labour to distance production and associated environmental violence from the North to the South. Within the realm knowledge economies and ecopedagogy, I return to problematizing how we, with our education systems, can disrupt and redefine development/growth/modernization to simply the speed of technological innovation to ground aspects of such innovations, changes in 'knowing' (hopefully 'better' knowing), and creativity for world-Earth peace and sustainability (Misiaszek 2018, 2019a, 2020).

Overall, it is the socio-environmental reading and reinvention of such innovation as 'knowledge generators', playing off the following quote of Peters (2019: 2), '…the necessary pillars of the knowledge economy with an emphasis on the speed of technological development and the development of technologies that were regarded as "knowledge generators"'. Aligning with Peters' framings and arguments of knowledge socialism, it is the construction and groundings of technologies as knowledge generators, as coinciding or conflicting with ecopedagogical tenets, that is problematized and, as the goal of ecopedagogical praxis, reinvented.

Citizenships and Positionality: Solidarity and Othering

Non-collectiveness inherent to _D_evelopment is countered by ecopedagogical work as an enemy of _d_evelopment's solidarity within and between local to global to planetary spheres (or citizenships' spheres, with planetary citizenship with Earth as a citizen (see Gadotti 2008, Misiaszek 2018, 2019a, 2020). Returning to globalizations to discuss global citizenship and its education (GC/E), collectivism must be global, through globalizations from below for _d_evelopment. Grosfoguel (2008) expressed through Wallerstein's (1992) arguments that logic and reasoning emergent from globalizations, constructed/manipulated by current global hegemonic entities (i.e., globalizations from above), will not lead to praxis for countering hegemony.

> No 'rational' control of the nation-state would alter the location of a country in the international division of labour. 'Rational' planning and control of the nation-state contributes to the developmentalist illusion of eliminating the inequalities of the capitalist world-system from a nation-state level. (Grosfoguel 2008: 13)

Grosfoguel (2008) viewed that empowering transformation from the nation-state is often meaningless within oppressive global systems. As such, praxis must be from the global level and I would argue, through ecopedagogical arguments (Misiaszek 2018, 2019a, 2020) within the planetary sphere.

Problematizing how modernities construct citizenships is essential, as Liliana Olmos and Torres (2009) argued the following conflicts of citizenship especially affected by globalization: (1) either making democratic participation more universal or governance guided by the global market; and (2) conflictive schooling roles of the state for increased collectiveness and economic output. Modernities through histories

of colonialism have created oppressive citizenships of 'us' versus 'them' (Fanon 1963; Memmi 1991), as well as possibilities to countering them (Torres 2017). In short, citizenships form contested terrains of countering or sustaining/intensifying oppressions.

I return here to Olmos and Torres' (2009) two questions on the constructs of citizenship under globalizations—persons' participation as universally democratic or dictated by the global market, and problem-posing the role of the State's schooling in the global market. These questions of how globalizations affect citizenship include effects in constructing knowledge economies that Peters argued as solidifying us as *homo economicus*, 'whereas the concept of the "knowledge society" helps to elucidate the concepts and rights of knowledge workers as citizens in the new economy, focusing on the subordination of economic means to social ends' (2007: 22). Peters continues by arguing for the 'knowledge and information rights of the citizen' and accompanying infrastructures that includes access, 'but also intellectual property rights…, the knowledge rights of the knowledge worker…, and democratic rights concerning the governance of public science' (2007: 23).

I have argued in other publications for the need to ecopedagogical problematizing of planetary sustainability within and between citizenships, economics, knowledge and labour, as well as coinciding with 'development' and 'modernity' constructs (Misiaszek 2018, 2019a, 2020). Peters (2004: 436) discussed environmental movements in introducing the knowledge socialism by emphasizing that '[t]here *are* expressions of new forms of socialism'; ecopedagogical work centres environmentalism. The next subsection problematizes globalizations' entrenchment of citizenship as consumption and singularizing modernity to oppress the 'non-citizen'.

Citizenship Grounded on Consumption

Lee (2005) argued through Bauman's and Tester's work that the 'rise of the consumer is the fall of the citizen' (2001: 114), accompanied with irrationality fixated on consumption rather than social goals and beliefs. Lee (2005) utilized Reuters report (2004) describing how a video game has become popular for Cairo teenagers despite its depiction of U.S. soldiers fighting their own people, as 'most of the country seethes in anger over US policy in the region' (71).[4] Lee argues that consumption of such gaming constructs an 'aporetic condition of being caught between tradition and consumption that defines choice in liquid modernity' (71). He further discusses how 'consumers exposed to the liquefying experiences of global culture, and these identities do not necessarily constitute a fixture from which a stable sense of belonging can be created' (74).

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[4]An obvious question would be if this holds true 15 years later, especially after the 'Arab Spring'.

This can be juxtaposition with Ivan Illich's arguments given previously, that desires have been designed and satisfied through modern production, while furthering 'us' from Nature. Infatuation with consumption is essential for neoliberalism and *D*evelopment's normative hold to bore out, while deprioritizing all local to planetary public spheres, and citizenships. Consumption, as it increasingly becomes one's primary identity and citizenship foundation, indicates the need to explore possibilities of critical citizenships, including global and planetary citizenships to counter 'us' versus 'them' versus 'nature' citizenship ideologies oppressions and dominance of nature (Misiaszek 2018). Torres (2009, 2017), as UNESCO Chair of Global Learning and GCE, writes extensively on supra-national citizenship as possibilities of globalizations from below for critical global citizenship. Opposingly, *D*evelopment through globalizations from above grounds global untethered consumption, diminishing collectiveness as stated, including collectiveness with the rest of Earth (i.e., the rest of nature)—coinciding with neoliberal GC/E models.

Michael Apple has expressed that teaching to recognize how we benefit from environmental violence (for example, myself able to write by using natural resources for electricity and the materials of my computer, as well as labour in its construction) as others (i.e., the 'them') is essential, including the rest of nature, is oppressed/dominated by what 'I'/'us' benefit from. However, consumption through neoliberalism only cares about the monetary and power gain for a few, so such problematizing through neoliberal frameworks is not only meaningless but also 'dangerous' for sustaining/intensifying hegemony through untethered consumption. Also, *D*evelopment's success relies also on modernities' and knowledge constructs that falsely separate environmental violence from social violence, especially is the violence falls upon 'us'.

In addition, loosening of solidarity is necessary for *D*evelopment to be successful, or needing to weaken citizenships, so violence upon 'them'/Nature does not limit 'our' consumption. Returning to Lee's (2005) example of Cairo teenagers consuming the game—the depicted killing of their people (their fellow citizens) must be ideologically separated from their cognitive knowledges because that could prevent them from consuming the game. Consumption is prioritized over all other solidarities, ethics and values to alienate them as a global consumer. Lee (2005) argues that such alienation leads to '[c]ommitment [as] almost impossible in a world where pleasure is derived from anonymous social relations' (74) in favour of consumer choice and ceaseless ambitions for consumption.

Non-citizen De-distancing: Authentic Dialogue

As argued previously, problematizing modernities touted as universal is essential in constructing *d*evelopment rather than *D*evelopment. Positionality is essential in critically determining the location of where the self speaks *from* as having specific power dynamics on how we speak of ourselves and others (i.e., the 'them'—the characteristics that are different from 'us', as citizenships often divides between

'citizen' and 'non-citizen') (Santos 2018; Memmi 1991; Fanon 1963). Within needed ecopedagogical work, I would also add problematizing how education presents the rest of nature and Earth holistically.

Without such reflective positioning, viewing what is seen as apolitical and universal becomes much easier, especially with epistemologies defined for this purpose—for epistemologies of the North, this is a tenet according to Santos (2018). Not problematizing our epistemological framing 'produces a myth about a truthful universal knowledge that covers up, that is, conceals both the speaker as well as the geo-political and body-political epistemic location of the structures of colonial power/knowledge from which the subject speak' (Grosfoguel 2008: 3).

The myth that Grosfoguel (2008: 3) speaks of is all 'truthful universal knowledge' that both emerges from and epistemologically encourages the 'delinking ethnic/racial/gender/sexual epistemic location from the subject that speaks, Western philosophy and sciences' without the need of reflectivity of positionality—as neutral, apolitical, unrelated to 'ego-politics', and God-like in knowing with questioning likened to acts of blasphemy. Epistemologically challenging development needs to be globally all-inclusive, as globalizations have normalized _D_evelopment without alternatives. In other words, _D_evelopment is taught as 'natural' throughout all aspects of all populations.

> …diverse forms of democracy, civil rights or women's liberation can only come out of the creative responses of local subaltern epistemologies. For example, western women cannot impose their notion of liberation on Islamic women. Western men cannot impose their notion of democracy on non-Western peoples. This is not a call for a fundamentalist or nationalist solution to the persistence of coloniality nor to an isolated parochial particularism. It is a call for critical border thinking as the strategy or mechanism towards a decolonialized 'transmodern world' as a universal project that moves us beyond Eurocentrism and fundamentalism. (Grosfoguel 2008: 18)

This quote by Grosfoguel (2008) describes how such values, which many hold dear as tenets of 'development', cannot be implemented through epistemologies of the North. Rather development must emerge from contextual, bottom-up constructions of what is 'progress', 'modernization' and 'growth' (often de-growth within _D_evelopment) through *the below's* epistemologies.

Towards this end, ecopedagogical conscientization of oppressions rooted in _D_evelopment cannot be from banking education grounded in the oppressors' ideologies and epistemologies, but within pedagogical groundings that counters them. This includes banking citizenship education. There are two main aspects that must be noted here. First, the 'oppressed' and 'oppressor' is relational rather than binary, with everyone as contextually both an 'oppressor' and 'oppressed'. However, this does not mean that there are not degrees of oppression (see Santos' (2018) non-/abyssal line comparisons of oppressions). Second, self-reflectivity outside of self-positionality 'where' socio-environmental oppressions occur is essential, returning to arguments of reflectivity and positionality previously discussed.

Such Freirean (2000) conscientization calls for truly authentic, democratic dialogue that requires continuous, rigorous self-recognition of one's limits of knowing oppressions upon the 'them'. This coincides with arguments that the neo/colonializer cannot fully understand the suffering of the neo/colonized (Santos 2018; Fanon 1963; Memmi 1991). A key overall question is what knowledge constructs are needed for this, as well as what are limitations of outside 'knowing'?

In the same vein, those benefiting from some processes of modernization towards *D*eveloping cannot fully understand the suffering of 'them'. Additionally, Freire (2000, 1998) argued that full class suicide is almost always impossible as he problem-posed if someone can, or is willing to, fully give up their own privileges. I problem-pose in my classes, if I would give up all associated privileges of being a U.S. citizen, male, and white; as well questioning if I truly know all the privileges contextually? Including relinquishing my privileges in/directly linked to global *D*evelopment? Santos (2018) has argued that self-reflection must be beyond one's own episte-mologies in using theories, especially through epistemologies of the South (or of *the below*) that exist to counter those from the North. Santos further argued that self-reflection is useless if reflectivity is through epistemological frames that justify oppressions and Nature's devastation.

Refocusing more specifically on the topic of modernity narrowed by epistemo-logical narrowness, I utilize Enrique Dussel's work has arguments that much of understanding our self as the oppressor, must be initially problematized through the self's epistemologies.

> …only way to grow from within one's tradition is to engage in critique from within the assumptions of that same culture. It is necessary to find within one's culture the originary moments of a self-criticism… (p. 45) [in] order to resist, it is necessary to mature. The affirmation of one's own values requires time, study, reflection, a return to the texts or symbols and constitutive myths of one's culture. (Dussel 2012: 47)

Coinciding with discussion I have already given on transmodernity, Dussel (2012) further described his argument on needing transmodernity within intercultural dialogue, in which I argue, once again, that this is increasingly necessary to disrupt globalized *D*evelopment and supporting modernities:

> …intercultural dialogue is neither only nor principally a dialogue between cultural apologists that attempt to demonstrate to others the virtues and values of their own culture. It is, above all, a dialogue between a culture's critical innovators (intellectuals of the 'border,' between their own culture and Modernity). It is not a dialogue among those who merely defend their culture from its enemies, but rather among those who recreate it, departing from the critical assumptions found in their own cultural tradition and in that of globalizing Modernity. Modernity can serve as a critical catalyst (if it is used by the expert hand of critics of their own culture). But, additionally, this is not even the dialogue between the critics of the metropolitan 'core' and the critics of the cultural 'periphery.' It is more than anything a dialogue between the 'critics of the periphery,' it must be an intercultural South-South dialogue before can become a South-North dialogue. (Dussel 2012: 48)

Such theorizing and epistemological diverse problematizing is essential in ecope-dagogy for praxis to literally save Earth, with Dussel (2012) having the following quote on this topic.

> The death of Nature is the collective suicide of humanity, and yet this globalizing modern
> culture learns nothing about Nature from other cultures, which are apparently more 'prim-
> itive' or 'backwards' according to developmentalist parameters. This ecological principle
> can also integrate the best of Modernity (and it should not refuse all elements of Modernity
> from the perspective of a pure, substantialist cultural identity), in order even to construct
> scientific and technological growth that emerges from the very experience of Modernity.
> (Dussel 2012: 50)

As Dussel (2012) described that 'globalizing modern culture' is absent of epistemolo-
gies of natures from cultured xenophobically labeled as 'primitive' and 'backwards',
we too often delegitimize epistemologies of the South that very well could help save
us from absolute socio-environmental destruction, but we often ignore them.

The call by Moacir Gadotti and Torres (2009) for ecopedagogies in order to have
true development of Brazil is essential, for many reasons, including the insepara-
bility between social and environmental violence, which would be viewed as nega-
tive within *d*evelopment and largely ignored unless negatively affecting hegemony
within *D*evelopment. The next section will further deconstruct coloniality and epis-
temological legitimization of *D*evelopment, including strengthening arguments of
development to not be *for* the 'non-citizen'.

Socio-historiography: Disrupting Neo/Coloniality

Similar to Memmi's famous quote that '[w]e have no idea what the colonized world
have been without colonization, but we certainly see what has happened as a result
of it' (1991: 114), Grosfoguel (2008: 5) poses the difficult and complex epistemic
question of '[w]hat would the world-system looks like if we moved the locus of
enunciation from the European man to an indigenous women in the Americas'.
Students often ask me if there are benefits of colonialization and I answer through
Memmi's quote, explaining the endless complexities and problem-pose, 'benefit for
"who"'?

Disrupting Coloniality and Fatalism: Counterstories
and Disciplines of Emergences

David Harvey expressed how our futures emerge from our histories.

> One of the myths of modernity is that it constitutes a radical break with the past. The break
> is supposedly of such an order as to make it possible to see the world as a tabula rasa, upon
> which the new can be inscribed without reference to the past—or, if the past gets in the way,
> through its obliteration. Modernity is, therefore, always about 'creative destruction,' be it of
> the gentle and democratic, or the revolutionary, traumatic, and authoritarian kind. (Harvey
> 2003: 1)

Identifying and then problematizing the politics of selection is essential—what histories do educators (individual to system-wide) pull from, and what histories are not selected, in constructing our, and problematically 'their' future(s)? In addition, how do selections align, or not, with *d*/*D*evelopment goals?

Ecopedagogical work through modernities that delegitimize the myth that histories of colonialization are no longer relevant are vital, as is work that counters modernities that further legitimize this myth. The myth of coloniality's end is expressed by Grosfoguel, opposing the literalization of 'post-colonial' describing the World: 'One of the most powerful myths of the twentieth century was the notion that the elimination of colonial administrations amounted to the decolonization of the world. This led to the myth of a "post-colonial" world…' (2008: 8) Believing this myth of the coloniality irrelevance, especially in discussion of modernities or modernization leads to unchallenged 'colonial situations' described as 'cultural, political, sexual and economic oppression/exploitation of subordinate racialized/ethnic groups by dominant racial/ethnic groups with or without the existence of colonial administrations' (Grosfoguel 2008: 9).

Harvey (2003) implies through discussing 'creative destruction' to construct 'modernity' that our histories ground our futures, either in it empowering or oppressive ways. Freire (2004, 2000, 1992) discussed this but this is utopic rather than fatalistic and should be taught as such. Globalizations, especially when termed as 'neoliberal globalization' and 'neocolonialism', are fatalistic when the 's' is removed from futures' plurality. Creative destruction of modernity, utilizing Harvey's wording, is grounded is dominant histories and eliminates histories of the othered.

This reminds us of Memmi's (1991) arguments that the worst aspect of colonialism was (and 'is' within neocolonialism) taking away the colonialized's histories. Countering globalizations and modernities entrenched in *D*evelopment through dominant (or *majorian*) histories is amplifying other histories (or counterstories). Counter storytelling, is defined by Daniel Solorzano and Tara Yosso (2002: 156), citing Richard Delgado (1989), 'as both a method of telling the story of those experiences that have not been told (i.e., those on the margins of society) and as a tool for analysing and challenging the stories of those in power and whose story is a natural part of the dominant discourse—the majoritarian story'.

Returning to the concept of knowledge cultures defined by Peters and Besley (2006), what are the stories, the histories, that are selected and not selected as 'cultural preconditions in the new production of knowledge and their basis in shared practices' (Peters 2019: 3) when constructing development and modernity? For example, the non-/selected histories of knowledges that construct technologies determine uses of technologies and knowledges emergent from technologies (see Peters, in this book, on this last one connecting to knowledge socialism). A key ecopedagogical goal is amplifying counterstories of environmental violence and the accompanying *counter-knowledges* through teaching counterstories, including possibilities by globalizations from below.

Calls for education's de-coloniality centres problematizing on how futures are limited and singularized by coloniality, including the epistemological foundations that sustain socio-environmental injustice and unsustainability. Such de-coloniality

is also essential in our disciplines. Epistemological deconstruction on how educational scholars theorize 'knowing' the increasingly globalized world in their teaching both directly and indirectly, including what is 'development' with modernities, must be through post-foundational framework and/or, as Santos (2018) argues, outside of disciplines emergent from epistemologies of the North (i.e., problematizing *sociologies of absences* to construct *sociologies of emergences*), and reinventions of foundational theories, including theories of modernities. For example, there have been various arguments in critiquing world-systems and globalization theories as reductively incorporating socio-culture analysis (Grosfoguel 2008; Wallerstein 1991). An important question for educators, including myself, is asking how teaching can disrupt globalization from above in defining 'development' when teaching, including the discipline of education, is historically grounded in epistemologically justifying oppressions and destruction.

De-orientalizing Development

Dussel (2012) has argued that modernities need globally diverse reinventions rather than being Western-dominant. Through paraphrased wording of Said's (1979) arguments on orientalism, Dussel argued for de-coloniality of modernities outside of Western/colonial lenses—a de-orientalizing of the theories, perspectives and ultimately, praxis. As Dussel (2012) argued later in his article, the devaluing of othered cultures as silenced in global dialogue, devalues knowledges and sciences from othered societies, often leading to the very unfortunate result of replacing dialogue with militarism. Two aspects evident here are an 'oriental' devaluing of othered national voices, and militarism through dominant *S*ciences and *T*echnologies, with upper-case designation for both well deserved, as both are dehumanizing and deplanetarizing. Ultimately, these and other factors inherently counter socio-environmental peace and planetary sustainability. Such violence, as expressed by Fanon and emphasized in Sartre's preface of *Wretched of the Earth* (1963), emerges not from the oppressed, but rather from the oppressors' actions upon the oppressed, as well as silencing their voices and vanishing their histories.

Banking education models are aligned with such silencing and vanishing. Taking Brazil as an example, Gadotti and Torres (2009) wrote below how banking education and colonial history have made Brazilians unprepared for thick democratic participation.

> The popular masses received no education at all, or at best a 'banking' education in which the student was viewed as an empty account to be filled by the teacher (p. 1259) … the causes that gave rise to 'democratic inexperience' should be sought in the colonization process itself. It follows that the roots of the country's cultural backwardness originate from its very history. (Gadotti and Torres: 1258)

As such, coloniality continues in Brazil well beyond the end of Portugal's colonial period, including schoolings' coloniality. Pedagogies, including environmental pedagogies, must not 'deposit' knowledges but be safe learning spaces (formal, nonformal, informal) of democratic, authentic dialogue.

Absence of such dialogue suppresses democratic participation inside and outside learning spaces, as well as praxis. I have argued, with Gadotti and Torres, that banking education for development is without true praxis and can only lead to *D*evelopment (2011, 2018, 2019a, 2020). Critical questions of what development's endpoints are, what are the 'alternative' endpoints and why are they viewed as 'alternative' are all essential, among others. Modernities as the processes of development towards their endpoints must be problematized in ecopedagogical spaces, as foundation to such spaces.

Socio-environmental violence largely emergent from neocoloniality and cannot be ended through solutions emergent from coloniality. Grosfoguel (2008, 1996) argued that the world's nationalisms have provided Eurocentric solutions within each nation of the world even though with coloniality, the problem in each nation is rather a Eurocentric problem itself. Confining perspectives/analysis only within the nation-state scope has helped sustain coloniality by sustaining false problem-solving through only Eurocentred epistemologies (including Eurocentred modernities) by suppressing needed diverse, bottom-up global lenses. Within the arguments of Santos (2018), failure is assured because solutions from epistemologies of the North, grounded in rationalizing oppressions of the South, cannot end those oppressions of the South, because those of the North have been grounded in those oppressions. This can be linked to the previous discussions on disciplinary *absences* and *emergences* in the previous subsection.

Disrupting 'Common Sense' Economics of Neoliberalism

I end this section by returning to the topic of economics, emphasizing the need for critical socio-historical teaching of capitalism and neoliberalism, as it relates to *d*/*D*evelopment 'common sense'.

> To call the present world-system 'capitalist' is misleading, to say the least. Given the hegemonic Eurocentric 'common sense', the moment we use the word 'capitalism' people immediately think that we are talking about the 'economy'. However, 'capitalism' is only one of the multiple entangled constellations of colonial power matrix of the 'European modern/colonial capitalist/patriarchal world-system'. (Grosfoguel 2008: 8)

Grosfoguel (2008) argues, among others (Freire 1998, 2004; Harvey 2003; Santos 2018; Torres 2009), that capitalism is beyond economics but also the coloniality behind it—with it oppressiveness from local to global levels. This conflict of capitalism I can discuss both academically and personally. Considering 'capitalism' from my perspective as an adolescent in the 1980s when, unfortunately, Reagan was the U.S. President, is much different from my thoughts on it for the past 30 plus years

since then. During this latter part of my life, I have argued with various friends and family members about aspects of capitalism as *only* economics.

My arguments were/are opposite of my pre-tertiary schooling years entrenched with ideologies of capitalism as unquestionably 'good' without any critical teaching of what is 'socialism' or, viewed as even worse, the 'enemy' of communism. With the common sense of capitalism's goodness, there was l no reflection on, or knowledges given, of capitalism's histories of oppressions and desired development and livelihood grounded in them. This is particularly true for friends and family members who are most devastated by these oppressions, with the few who are Trump supporters are most negatively affected. These are constant reflections throughout my critical eco/pedagogical work in trying to problematize how larger socio-environmental and unsustainable work at global and planetary levels, but also more national and local levels too. This, in some ways, relates very closely to the following concluding topic of post-truthism.

Concluding Analysis: Post-truthism and Bullshit

This conclusion will not offer a chapter summary, rather I will deconstruct the current era of post-truthism through some arguments discussed. If ecopedagogues' goal is teaching to critically read *D*evelopment for praxis to emerge through frameworks of development, a central question how such transformation in constructing futures can happen? How with histories of socio-environmental oppression and dominating nature are so ideologically latent in narrowing possible futures towards a single fatalistic future? In answering this question, I return to 'creative destruction', as Harvey describes it as radical below[5]:

> …the centrality of 'creative destruction.' You cannot make an omelet without breaking eggs, the old adage goes, and it is impossible to create new social configurations without in some way superseding or even obliterating the old. So if modernity exists as a meaningful term, it signals some decisive moments of creative destruction. It is often difficult to decide if the radical break is in the style of doing or representing things in different arenas such as literature and the arts, urban planning and industrial organization, politics, lifestyle, or whatever, or whether shifts in all such arenas cluster in some crucially important places and times from whence the aggregate forces of modernity diffuse outward to engulf the rest of the world. The myth of modernity tends toward the latter interpretation (particularly through its cognate terms of modernization and development) although, when pushed, most of its advocates are usually willing to concede uneven developments that generate quite a bit of confusion in the specifics. (p. 1) (Harvey 2003: 1)

I would argue, with other ecopedagogical scholars (Gadotti 2008; Kahn 2010; Gutiérrez and Prado 1989), that such radicalness grounds ecopedagogies, including modernities with 'some decisive moments of creative destruction'. Teaching through deconstructing the points of historical latency of instilling oppressive/dominate

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[5]It is worthwhile to note that Harvey problematizes a Saint Simon and Marx's argument..

fatalism (i.e., single future) helps to initiate and guide creative destruction of modernities that lead to a _D_evelopmental endpoint, rather than _d_evelopmental endpoints.

Post-truth aspects of today's globalized societies are increasingly important to countering with such creative destruction. Post-truthists have utilized both sides of hubris by both 'knowing' beyond previously determined 'truths', as well as utilizing aspects of impossibility of knowing all 'truth' so opinion-based, post-truth 'truths' are falsely seen as equally valid.

> We have the real facts: you have the alternative facts', so that we become embroiled in a binary from which there is no easy escape. We run the risk of claiming the ability to know what the facts are: the hubristic position of modernity… Our forms of 'truth' may correlate better to the facts as we see them: they don't correlate better to a world permeated with conflicts about racial privilege and economic advantage corresponding to a certain range of beliefs.[6] (Devine 2018: 167)

Some scholars have argued critical, and postmodern theories, among other theoretical frameworks, have grounded such post-truth arguments of truth subjective subjectivity, as objectivity is continuously questioned, and coinciding apolitical, neutral education. I have argued elsewhere (2019a, b, 2020) against these arguments within ecopedagogies, in that goals of truth-seeking are inherently absent from post-truthism's ideological false-truth-seeking.

As Devine (2018) discussed as 'the hubristic position of modernity', the eco/pedagogical question is how can teaching counter such hubris. Answering this is complicated for various reasons including how Harry Frankfurt's book *On Bullshit* (2005/1986: 47), decades before 'post-truth' became a popular term, problematized the 'contemporary proliferation of bullshit also has deeper sources, in various forms of skepticism which deny that we can have any reliable access to an objective reality, and which therefore reject the possibility of knowing how things truly are'.

Since Frankfurt's book, falsities concealed as truths have increased prevalence and systematic undertakings, with increased amount, precise targeting, and Internet access to them. It is essential to briefly note here some key arguments on bullshit versus post-truthism, some that I have previously discussed through other scholars' work within environmental pedagogies (Misiaszek 2019b, 2020). Frankfurt characterized bullshit as not knowing or caring about the truth or if being deceptive, but rather to sound more truthful and appear more favourable. This differs from post-truthism within 'journalism' that is meant to lie and deceive, veiled as 'news' by misusing the term (Rose and Bartoli 2020; Wright 2020). Aligning with such scholarship, I would problem-pose how acceptance of bullshitting has paved the way of accepting fake news, with such arguments as unopposed bullshit openness (Wright 2020), hiding failed capitalism and polity (i.e., deficit fetishism) (Hopkin and Rosamond 2018), and increase amount and self-selection of information due to technological 'advances' (McIntyre 2018; Wright 2020; MacKenzie and Bhatt 2020).

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[6]See https://www.youtube.com/watch?v=fFD7eZJ5Tyo. Accessed 1 September 2020.

Focusing on this last aspect, I return to my previous calls to critically decon-struct globalization of/from technological 'advances' touted as _d/D_evelopment and knowing 'better'. An ecopedagogical goal of praxis is reinventing technologies can deepen and widen our understandings of socio-environmental 'truths' _with_ rigorous self-reflectivity of determining our limitations of 'knowing' nature's truths and each other. In this chapter, I have argued that widening understandings through ecoped-agogical work to the planetary sphere complicates understandings with many limi-tations of 'knowing' Earth subjectively within the World as part of Earth with the absolute objective laws of nature. However, recognizing these limitations should not deride the seeking of 'truths' in favour of 'creating' truths (Misiaszek 2019a, b, 2020). This calls for many aspects in problematizing modernity, including 'how can we re/de/construct modernity for truth-seeking as global goals, but locally contex-tualize (i.e., deepened) and planetarily understand (i.e., widened) the world-Earth'. Utopic goals of modernity(ies) should be aligned with narrowing such limitations of knowing Earth, countering 'bullshitting' and, more importantly, post-truthism.

I end this chapter by questioning if knowledge capitalism within neoliberal fram-ings justify post-truthism, if the outcome of self economic profit and hegemony [i.e., neoliberalism's singular focus (Postma 2006)] is achieved through false-truths? In other words, without concern for socio-environmental processes or results, fabri-cated knowledge is not only justified but also encouraged and ultimately necessary for _D_evelopment. I would argue aligning with Peters (2019: 5), that knowledge socialism is essential to '[marshal] public and private financial and administrative resources to advance knowledge for the public good', thus fundamentally countering knowledge neoliberalism and associated falsifying with the veil of truths. There is endless neces-sary dialogue, theorizing and actions needed on the issues discussed throughout this chapter, with some aspects given here, but the overall goal is constructing diverse knowledges systems through diverse ways of knowing for socio-environmental peace and planetary sustainability.

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Greg William Misiaszek, Ph. D. is an Assistant Professor at Beijing Normal University, Theories of Education Institute and Associate Director of the Paulo Freire Institute, UCLA. His current work focuses on critical analysis of environmental pedagogies, with specific emphasis on ecopedagogy, through theories of globalizations, citizenships, race, gender, migration, Indigenous issues, and media, among others. His recent book (2018) on this analysis within this Routledge GCE series is entitled: *Educating the Global Environmental Citizen: Understanding Ecopedagogy in Local and Global Contexts.* Misiaszek's upcoming Bloomsbury book, *Ecopedagogy: Critical Environmental Teaching for Planetary Justice and Global Sustainable Development*, will further deconstruct these topics.

Chapter 14
Knowledge Exchange and Knowing: The Self, Art Practice and the Digital

D. M. Bothwell and P. A. Stewart

Introduction

> One form of new expression concerns what I call *knowledge socialism* to indicate the new struggles surrounding the politics of knowledge that directly involve the academy. (Peters 2004: 436)

This chapter is a series of thoughts and provocations that are explored through the lens of art practice. The chapter first of all looks at the centralisation of economic profitability in higher arts education achieved through its increasing mechanisation and digitisation. It then looks at the possibilities offered by art practice, as a tool for revealing hidden systems of control and ownership in society, which have created a digital age of distrust. Two methods of art practice are proposed, the first is 'defamiliarisation', a method of art practice to make the present time strange in order to gain understanding of it. The second method is 'hauntology'—a method practised through art which evokes an experience of contemporaneity by understanding it as a constant recombination of the past and present, framed by this chapter, through digital knowledge exchange.

The chapter considers artworks which practise institutional critique and explore the effects of the digital on the production of society and the self-therein. It looks at recent shifts within neoliberal societies which have influenced knowledge exchange. This is examined from a sociological standpoint across the arts in higher education (HE) institutions. Our current capitalist malaise within neoliberalism is attributed here, to a shift from knowledge pursued for its own sake, towards an ethos of

D. M. Bothwell
Newcastle University, Newcastle, UK
e-mail: d.bothwell@ncl.ac.uk

P. A. Stewart (✉)
MIMA School of Art and Design, Teesside University, Middlesbrough, UK
e-mail: P.Stewart@tees.ac.uk

managerialism and knowledge capitalism. The chapter's key aim is to demonstrate the impacts of digital technology on the development of knowledge exchange and formations of the self. In turn, it looks at how art has explored this complex process through defamiliarisation and hauntology's unpicking of the self. As Michael Peters notes, 'rather than relying only on the market to serve as a catalyst for knowledge creation, knowledge socialism marshals public and private financial and administrative resources to advance knowledge for the public good' (Peters 2019: 5).

Art practice over the past 20 years has been influenced by our advancements in communication and ability to access and exchange information and data. Art practice has taken up information and knowledge exchange as a key area of focus. This can be demonstrated within art's preoccupation with dismantling singular authorship and its rejection of the autonomous and archetypal art object from the period generally termed as postmodern. This rejection is apparent through the increased visibility of socially engaged artworks which are authored by artists and communities working together.

Artworks co-authored with specific communities or the gallery-visiting public have increasingly become acknowledged as primary contemporary artworks by art galleries and museums, occupying the central gallery space. In the past, such participatory projects were sidelined as secondary outreach projects by the institution's education department. This co-authored and participatory turn in art has responded to the digital age. Artists have not only harnessed and developed new technology in order to engage with different publics and use new methods of knowledge circulation. They have actively critiqued and tested the systems of knowledge exchange which are ingrained in society. This leads to the relevance of art practice as a method able to analyse and test concepts of knowledge socialism. A key definition of 'knowledge socialism' provided by Peters develops the notion of:

> knowledge socialism to indicate the new struggles surrounding the politics of knowledge that directly involve the academy and I do not simply refer to the role of theory. I am referring to what has been called knowledge in the age of 'knowledge capitalism', a debate that increasingly turns on the economics of knowledge, the communicative turn, and the emerging international knowledge system where the politics of knowledge and information dominates. (Peters 2004: 436)

These ideas of the role of the academy and knowledge artists have challenged through institutional critique. The systems and processes of communication we use are opened up by artists inviting the public to be both producers and users, who create divergent exchanges that aim to disrupt established social relations of production and distribution, to make visible their economic systems and private ownership. In terms of knowledge socialism, such art projects intervene in areas which are tied up in knowledge capitalism and in particular within our 'publicly owned' institutions.

Two different approaches have been taken to this institutional critique over the past 60 years. These are (i) producing alternative systems and (ii) critiquing the institutions from the inside. For the former approach, artists have engaged with developments in exhibition display and authorship of knowledge in art making by

adopting new methods of knowledge exchange throughout artistic, curatorial and institutional practice. This history can be traced from the beginnings of the avant-garde, through artist groups who have created alternatives to the mainstream art establishment, in the form of artist-led gallery spaces, groups and publishers. Broadly, the avant-garde is associated with Fauvism, Futurism, Dada, De Stijl, Bauhaus and Fluxus.

Its history variably understood is generally thought to have developed from the 1863 'Salon des Refuses', an exhibition of artists including Édouard Manet and James McNeill Whistler, who were rejected from the official Paris Salon exhibition (Chilvers 2009). This was followed by Der Blaue Reiter, an artist group led by Wassily Kandinsky and Franz Marc, who rejected the official Neue Künstlervereinigung München (Munich New Artists' Association). In his attempt to characterise this area of art, Peter Burger in *Theory of the Avant-Garde* (1987: 57) outlines that the avant-garde failed in the sense that 'the social institution that is art proved resistant to the avant-gardist attack', but one thing that it achieved was to make 'means (of art making which) are freely available, i.e. no longer part of a system of stylistic norms'.

Burger connects here the failure of the avant-garde to remain out with the institution, with the development of the practice of institutional critique by artists, which has become known as a category of art practice. The history of the avant-garde and its development into institutional critique shows that from an art historical perspective, artists have enacted knowledge socialism by analysing established systems of knowledge exchange in society starting with individual institutions and looking for instances of knowledge capitalism and symbolic modes of capital.

Artists have often used materials and methods which are synonymous with the art institution to critique the arts institution from the inside. This aimed to challenge every aspect of the arts institutions including its own language and mechanisms of communication. This has included critiquing symbolic and financial forms of capital held by the institution. Artist Hans Haacke's artwork, MOMA Poll (1970) was a direct critique of the relationships the Rockefeller and Nixon families had to the Museum of Modern Art. In text on the gallery's wall, Haacke posed this question: 'Would the fact that Governor Rockefeller has not denounced President Nixon's Indochina Policy be a reason for you not voting for him in November?' (Haacke 2009: 3). Visitors then could drop ballots into either of two plexiglass boxes, for 'yes' and 'no' (visitors chose 'yes' twice as often as 'no'). Rockefeller was a trustee of the museum; the gesture asserted that the art institution was not a neutral space, its affiliations made it political.

Not only have the affiliations of the institution been questioned but also how individuals over time have influenced the art institution's narratives. This has led to questions regarding colonial histories, the control and distortion of historical narratives and the suppression of histories of the oppressed. Fred Wilson's exhibition and artwork mining the museum (1992) took objects from a provincial museum's collection from before the abolition of slavery and created displays which gave an account of slavery in the state. The work was focused on the collection at the Maryland Historical Society. Many objects it held had been purposefully not exhibited

and lay in storage because of the history of slavery that they spoke for. This decision to effectively erase this history was made by the white male museum board and further highlighted issues of control and ownership, not only over state provision and services, but over histories of the state, deliberately kept silent.

Institutional critique, as demonstrated through the examples mentioned since the 1970s, has been practised by artists critiquing the art world and its institutions, and this in turn has more recently shifted to the paradox of the institution producing its own critique. A number of international arts institutions have been characterised by a focus on developing methods of curatorial practice which aimed to dismantle traditional practices and preferences in the praxis of arts institutions. This has been termed New Institutionalism and has emphasised discourse and participation, breaking down the historically divided curatorial and learning/engagement divisions. It has re-examined how the artist and the public are represented and historicised in museum collections and archives, dealing with issues of exclusion, representation and the legacies of colonialism.

Such an arts institution, Van Abbe Museum, Holland, is described by the director Charles Esche as 'part community centre, part laboratory and part academy, with less need for the established showroom function' (Doherty 2004: 2). This is an example of how the institution itself has evolved a language of artist's critique to undergo self-evaluation subsuming critique, using it to reform its own form and its methods of communicating with the public. This raises the question of power relations and who holds power. If the institution is in control of its own critique and its own narrative, it still sets the parameters, and it defines how knowledge is exchanged, seen or experienced. This indicates an import factor of knowledge socialism, the importance of devolved ownership and control.

A key definition of 'knowledge socialism' provided by Michael Peters (2004: 436), mentioned previously, focused on the idea of what can be called knowledge in the age of knowledge capital. This could be read within the framework of institutional critique and art practice, what can be called practice in the age of capital or more specifically what can we call beyond capital if everything we produce becomes capital (in terms of art practice trying to influence change). Peters using the example of the university education institution states:

> Whatever the encroachment of knowledge capitalism on the universities and higher education more generally, the free and frank exchange of ideas stills serves as a sound model of sociality and in this sense knowledge capitalism, I would argue, is parasitic on knowledge socialism for, as Marx, Wittgenstein and Bourdieu acknowledge, knowledge and the value of knowledge are rooted in social relations. In this premise is buried the future politics of knowledge both for the academy and for the developing world. (Peters 2004: 437)

Knowledge socialism is for art practice the ability to frame the relationship of socially engaged art and activist art practice within institutional critique is the rooted importance of social conditions and relations. It is the attempt to dig and explore the potentiality inviolably possible in art practice and the academy to imagine new or different worlds.

Digital and Higher Education

As HE institutions increasingly adopt a neoliberal ethos, this has a direct effect on the creation and dissemination methods used to facilitate knowledge production and learning. This can be seen across course structures and curriculum development. For example, in the modulisation of study to smaller interchangeable 20 and 10 credit modules, where students' ability to acquire the qualification they have purchased is prioritised over the learning process itself. Another key change is the centralisation, digitisation and automation of administrative aspects of the institution. This can be seen in their adoption of online and surveillance systems to track attendance, printer use, pinpointing location through swipe card access use. This monitors and tracks student and staff use of facilities. In terms of labour, administrative transactions between institution and staff or student are digitised and devolved to the user.

An example of this is the replacement of the direct tutor and student interaction normally occurring through taking the attendance register. Instead a four-digit attendance code is distributed to the student at the beginning of the session, which they must enter into an application (app) on their computer or mobile device. This devalues human interaction between people in this system. The result of which is to make the primary role of employees and students ratable and replaceable administrators of the business system, and therefore, devaluing their personal characteristics, the value of the knowledge and the facilitation skills they hold. This process of dehumanisation relates to the post digital paradigm which does not describe existence after the digital age where we can think about the digital revolution objectively. Digital technology is embedded as a means we think with, as well as a subject that is under scrutiny. 'The sheen of efficiency, productivity, and objectivity that one seemed to characterize everyday understandings of the digital has been tarnished with revelations of bias, discrimination and inequality'. (Jandrić et al. 2018: 895) The post digital is a recognition and exploration of the embedded relationships between the digital and our human, social biases and ideologies. In terms of arts education, the crisis of dehumanisation through digital processes is enabling a separation of action from context, more specifically a sedation of human activity into code without questioning the outcomes. As Jeremy Knox states

> In other words, the post digital might be usefully developed as an alternative view of human-technology relationships, and one that challenges common-sense ideas about the sequential progress of technology, which tend to limit responses to either an embracing of futuristic technological enhancement, or the desire for a sentimental return to a more 'natural' existence. (Knox 2019: 357)

In other words, the opportunity now is in remaking those connections between human and technological activity and investigating where to locate aspects that support democratisation within our learning activities.

The concept of creating sites of learning as democratic environments has been entirely shrouded by the adoption of a profitable business model here. This digitisation of resources and capital in HE is the bedfellow of neoliberalism. A recent

NESTA report in 2019 (a UK-based thinktank on society, economy and digital practice) proposed that there has been a stagnation in the knowledge economy in the UK. It proposes this is due to a reduction in access brought about by the digital revolution. They state

> Moving toward a democratised knowledge economy is partly a matter of the accessibility of technical hardware and software design and interface but it also involves the stories that are told about such a knowledge democracy. Such a story should not be about economic growth but about the power and potential of the individual and collective imagination. It is a story of people taking control as makers, not just as consumers. (Mangabeira Unger et al. 2019: 5)

One element of this digital change has been the focus upon immaterial labour. This is labour that may be for example, cognitive and have no obvious physicality. It may involve material resources which are not immediately visible in the labour process. It may also involve implicating individuals in a labour task without their knowledge of it. Services for economic and cultural development through free apps and low-cost services including those we use regularly have become commonplace. We are becoming more aware of how our personal data is implicated in these ways and can be used by tech companies for profit. The offer of 'free' services which appeal to individuals for social and knowledge exchange results in personal data entry and capture. These sites may be open and accessible, but they are marketised and are not platforms of democracy.

For a democratised knowledge economy to exist, the first task is to acknowledge that knowledge itself is not material. This is similar to Antonio Gramsci's concept that everyone is an intellectual, as there is no such thing as a non-intellectual (Gramsci 1971: 131). Knowledge is not consumable, and it is the materialisations of knowledge, such as resources and facilities which if knowledge is regarded as secondary to the financial gain by the institution, then it is this ethos which sacrifices the quality of knowledge developed. Financial gain always looks for shortcuts to customer satisfaction and profitability. This can be demonstrated in HE arts subjects, which have, at some institutions in the UK, recently removed the interview procedure where prospective students attend the university for an interview in real life (IRL), discussing their portfolio of work with course lecturers, before being accepted entry to the course. This standard procedure aimed to assess artistic integrity through a form of peer review. Instead, this has been replaced recently in favour of accepting candidates who achieve the required tariff points from previous education.

The participation of both university employee and student in a digitised system which quantifies their engagement with knowledge and learning as 'prosumers' not only raises questions over the ethics of their personal and the sometimes unconscious implication and enlisting of their labour. It raises immediate concerns over how their digital interactions dehumanise their process of education, making the human element expendable. It shows that their digital data can be used and skewed to justify aims outside of their control, and if this information is tied up in a financially motivated system and institution, the quality of knowledge would always be secondary to financial aims. As stated by Tapscott and Williams,

profound changes in the nature of technology, demographics, and the global economy are giving rise to powerful new models of production based on community, collaboration, and self-organisation rather than on hierarchy and control (…) Customers become 'prosumers' by co-creating goods and services rather than simply consuming the end product. (Tapscott and Williams 2008: 206)

In this sense, the neoliberal endgame has also introduced decentralised models of production. But the idea that these devolved moments in the market are collaborative or are possible moments of resistance is naïve. The art practices outlined in the next section highlight this issue. Another example of this is an event I worked on at a large gallery in London. The event was titled, 'Gallery Education and the Digital Future' (2013). A range of speakers discussed this very topic, and the overriding viewpoint was that the digital space enacted the decentralisation of power. Consequentially, lots of energy was given to the development of Massive Open Online Courses (MOOCs) and their ability to flatten the development of knowledge and level the playing field. Mass collaboration has historically had a close affiliation with unions and socialism.

The emergence of digital spaces which are considered to be free, open and decentralised, which take the form of social media and peer-based commons production, has appeared on the surface to transcend the model of competition. There is an increasing consciousness now that this was not for the benefit of a cooperative world but instead for capitalist gain through data mining. There may have been a deep desire for socialist expression through digitisation but neoliberalism is still present on every corner, waiting for opportunities to co-opt, reproduce and marketise. The public space of the university, which in its founding aims was once a civic space for learning in the public benefit, has implicated its users in a process of financialisation.

The success of neoliberal capitalism is in the success of instant communication. For Pierre Bourdieu, non-mercantile types of exchange are regarded as disinterested, and this includes social and cultural capital. Education can be understood, in this way, as the deployment of symbolic power and capital. A questioning of these sites is necessary in relation to the distribution of power, legitimate queries into value, wealth, authority and ownership.

[Education is] responsible for the reproduction of social structures and for the reproduction of the mental structures that, because they are genetically and structurally linked to these objective structures, favour the misrecognition of their truth thus the recognition of their legitimacy. […] Two fundamental principles of differentiation – economic capital and cultural capital – the educational institution, which plays a critical role in the reproduction of the distribution of cultural capital and thus in the reproduction of the structure of social space, has become a central stake in the struggle for the monopoly on dominant positions. (Bourdieu 2013: 33)

The key point here is how social space is created and used to produce two distinct forms of capital. An example of this can be seen through the Central Saint Martins' Art School in London and its move to Granary Square in Kings Cross in 2011 designed by Stanton Williams Architects. The design of this building aimed to be fluid, and it reduced in size the individual fine art studio spaces, in favour for public multi-disciplinary seated social open workspaces throughout the intermediary connecting

corridors of the building. The concept behind this design favoured the potential of cross-disciplinary sociality and innovation. The old model was more traditionally industrial, oriented around an art student engaged in material production and providing space where material making and thought could be combined privately while also having access to a social community via the studios surrounding. It sacrificed the students' ability to take ownership over the fabric of the art school building. The proliferation of use of our digital selves may be in the prolific reduction to have ownership over our physical reality.

Knowing

John Dewey presented learning and society in the 1930s as intrinsically linked in terms of a knowing of society or for what can be known and how: 'One great moving process of human activity, knowable by an intersection of multiple, unprioritizable perspectives, which are themselves in process.' (Lavine 1989: 14) This idea in 2020 can be extended to the constant production of versions of the self through image making and data, which is gathered through our online interactions. As Gerald Raunig, critical theorist, suggests: 'The full ambivalence of the knowledge factory is in the modulation of its mechanisms of appropriation and its potential for resistance.' (Raunig 2013: 4) The knowledge factory is broader than one site such as a university; it exists across all on and offline sites where we interact and exchange data regularly since the boom of wikis from the mid-1990s. It is important to consider how this web or nexus of interacting as sites which were initially methods of freely sharing information on focused topics has instead become co-opted for the commodification of knowledge and the exploitation of data. It is only through acknowledging this reality and through understanding its nuances that methods of subversion can be enacted.

Take for instance, Steiner's famous cartoon in the New Yorker in 1993: 'On the Internet, no one knows you're a dog.' As sourced from a Washington Post blog looking back over the effect, this cartoon has had in the past 20 years (Cavana 2013). The ability to manipulate or dupe any digital recipient to your content online has produced both excitement and the fear and has intensified through our heavy reliance on digital and cloud-based tech for communication and information gathering. To what point can the self be extended online within these conditions of ambiguity, invisibility and lack of accountability, in comparison with an IRL context?

What if I was a dog? I am online, and I am able to use software to interact with other users of a social media interface who accept my human disguise. From an ethical standpoint, we have a loss of the essential foundations of a knowing of society replaced by mimicry. The seriousness in this analogy is towards the proliferation of fake profiles, fake fact checker websites, fake news, as well as bots that are able to formulate responses and profiles based on mined data. It is possible to imitate a real individual's engagement with such a platform. In this sense, locating ideas of sociality becomes difficult through these platforms, and it becomes more challenging to discern what is *credible* knowledge. However, the digital realm is not unique in

its ability to lie, mimic and manipulate IRL. All the former factors of trickery are conditions common to human interactions. When thinking about formations of the self both on and offline, through sites of exchange, how can we use the distinctive qualities of these environments to our advantage?

The solution is to consider Uniform Resource Locator (URL, colloquially used to represent the web) and in real life (IRL) as one and the same in terms of creating and producing works and objects. The issue of URL is always to refer to the non 'Internet-y' thing. The idea is that you do not create this, at the level of semantics, a division between what is your real life and what is you on the Internet because all of 'them' are part of the same thing. The point is to reinforce the fact that the digital is material, both in terms of its infrastructure such as the fibre optic cables and the data centres that power and connect it. Bitcoin is not immaterial; it is consuming high amounts of energy. There are bodies both behind the interfaces that we use and in front of them: there is no porn without the cum shot or climax both behind and in front of the screen. We are people at all times when we are engaging online, even if we feel ostensibly cyborg at that point, there is a level of embodiment that is operational. There is no division between URL and an IRL; everything is IRL. Dividing tasks or isolating a subject for clarity and classification can be useful at the level of activism. However, division can lead to disassociation and short-sightedness. It is always better to crash these things together than to prize them apart.

The pulling together of digital communities can be seen through the perspectives of the Xenofeminist Manifesto. Xenofeminism is a feminist movement considering the alienation and automation of society it '…is not a bid for revolution, but a wager on the long game of history, demanding imagination, dexterity and persistence'. (Laboria Cuboniks 2016) Helen Hester, member of the feminist collective Laboria Cuboniks, in her book *Xenofeminism: A Politics for Alienation* (2019) expands on the original manifesto. This queer and trans-inclusive feminist manifesto begins by highlighting the inextricable link between bodies and technology in the key section called 'technomaterialism'. Its idea is the rethink and reuse mechanisms of oppression. Instead of surrendering to oppressive forms and systems of power, we can begin resistance by taking possession. Hester uses the example of the 'Open Source Gender Codes' project, which seeks: 'to enable people to grow their own hormones at dedicated community hubs using transgenic tobacco plants' (Hester 2019: 142). Transpeople and others who find ways to self-experiment with hormones outside of previous constraints today are positioned as the beneficiaries of women who seized the tools for (early) abortion in the 1970s. Like Donna Haraway, Hester posits that the ideological refusal of wholeness is implicated in gender, class and race as historical categories of oppression, which are ripe for abolition.

Another example of intervening in these oppressive mechanisms of neoliberal power can be seen in the work of the founder of the Feminist Economics Department: artist and activist, Cassie Thornton. Initially, Thornton created this 'department' to explore concerns which stemmed from her own personal experience with debt as an art student. Her work demonstrates that:

even as art students are being trained to work in various mediums and to circulate their work through an art world increasingly exposed as imbricated in its conceptual and economic structure into the circuits of contemporary capitalism, they are all the while implicitly training and being trained in the making of debt and in living, working, and creating art in a condition of indebtedness. (La Berge 2015: 2)

From this personal starting point and through the mechanism of this organisation, she has devised artworks such as Give me Cred! Auxiliary Credit Reporting Bureau (Thornton 2013-current) which thinks about a broader spectrum of people affected by the same issue, debt. Give me Cred! is an artwork which challenges the systems within a financialised neoliberal society. It tackles a major issue in the Canada and USA of credit reports being used as a primary mode of assessment in two main areas of everyday living: job recruitment and housing. At the point of application for a job or a tenancy, credit reports are automatically undertaken, impacting severely upon individuals with a bad credit rating. This is frequently taken as the definitive measure of an individual's standing in a community, of whether they are reliable and trustworthy. It also influences social mobility. Following requests through the Give me Cred! website, Thornton provides a report which narrates the individual's financial experience, drawing a broader context around the life circumstances around which have led to a bad credit rating. This official-looking document outlines these facts for the potential landlord or employee in the position of power. Even if not taken entirely at face value, the benefit of the project is that it reminds not only the candidate but people in positions of power that they can decide not to adopt such policies and that they are able to use discretion.

This project demonstrates how everyday elements of life have become increasingly mechanised and made statistical removing power from individual people and instead creating systems which reinforce and reproduce social bias. Thornton is trying to reconnect the circumstances and subjectivity of a credit report. Under the official auspices of the Feminist Economics Department, she offers the opportunity to take ownership over one's subjectivity and engagement with an automated, neoliberal system of financialisaton. This has affinity with Hester's proposal to consider the bodily connections to technology, and it demonstrates the importance of developing shared knowledge banks to do so. Such resources can share skills, tools and information and enable the individual to change their social situation. It emphasises the importance of a collective intelligence that is pivotal to a knowledge socialism. As Peters notes, '[k]nowledge socialism promotes the sociality of knowledge by providing mechanisms for a truly free exchange of ideas enhanced by peer review' (Peters 2019: 5). It acts like this that develops an opportunity to push forward collegiality towards producing sites of peer use challenging capitalist modes of individualised production.

The popularity of online platforms and social spaces comes hand in hand with an increase in the use of private spaces to perform this type of online interaction. The Internet cafés of the late 1990s and early 2000s are now long gone in a transatlantic context. What is deemed as a public or a social experience online by the individual (Facebook/YouTube/Twitter/Instagram/Reddit/4Chan) takes place primarily in one's

own house or room, through a pocket device or on a TV, and it takes place uninterrupted, around the clock. This conflation and combination of private and public space blur any distinction between interactions in public, in private or in common. What does sociality mean, if it is incubated in private? One example of a group trying to consider this question is the Ideal Spaces Working Group.[1] They are an assembly of academics, artists and designers across different fields, focusing upon current developments in our built environment asking how the constructed environment affects our everyday lived experience. The group develops public platforms of exchange using technology such as augmented reality (AR) and virtual reality (VR) to reimagine common space and architecture. Looking at utopian design and architecture, the group questions public conceptions of 'ideal' and 'natural' spaces.

The Arcadian landscape, Pruitt-Igoe, online environments like the game Civilisation (2020), the constructivist theatre-set designs of Alexandra Exter, even the cloud are all broad examples of physically constructed or conceptual myths of ideal space. Ideal spaces claim most of these examples have failed because of their top-down design, their disconnection from the communities living in these sites, from the real and self-governing principles of nature and from non-ideal living space issues. The group focuses upon providing new frameworks and tools which allow the users of space, to input and collaborate in the design process. In turn, the means are provided for the community to think through the alteration of space together. The projects ask the public to think of ideal space differently, often visualising otherwise unseen aspects of space. This motivation is underpinned by community building through public design platforms such as interactive exhibitions, multimedia artworks and interdisciplinary research events.

Defamiliarisation

In her essay 'Novel of the Future' (1968) Anais Nin claims that it is the function of art to renew our perception. In a sense it is not for artists, in a post digital context, to pragmatically attempt exposing a 'truth', convincing their audience of it and to reclaim ownership over the shaping of their subjectivity and our knowledge systems. Art is in the effort to take the everyday and make it strange through its defamiliarisation to its environment. Through a combination of strange experiences and slow contemplation, the encounter and involvement of art are its crucial offer and not to persuade others to its opinion of the world. Art practice in this context is the acknowledgement of the experience of the work as contingent, situated alongside its environment, local ecology or structural system.

Curator Dani Admiss launched the project Playbour: Work, Pleasure, Survival (2018). This project can be seen as a development from an interest in interactivity

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[1]See https://www.idealspaces.org/about. Accessed 28 September 2019.

and games within the area of New Media Art (see Graham, Serious Games 1996).
In Playbour, Admiss uses games and gaming as a strategy to make the public into
players, not passive spectators and through doing, learn about deeply rooted techno-
logical processes in our daily lives, exposing instances where we become unknow-
ingly implicated by them. The games in the exhibition were created collaboratively in
co-research laboratories held at Furtherfield by Admiss, attended by activists, artists,
designers and researchers who responded to an open call. The fusion of expertise and
perspectives and the open nature of non-selection by the curator intended to throw
up new issues and aspects of our technological lives. This approach incorporated
into the curatorial methodology of the exhibition a more plural and not expert-led
approach, which drew from different pools of knowledge available to tackle complex
subject matters relating to the embeddedness of technology and everyday living. It
tries to dispel the sentiment around technology that is too complex and opaque to
be knowable. Instead, it is only through the creation and sharing of focused collec-
tive knowledge, bringing together different skills, expertise and experiences that it is
possible to draw connections between initially invisible, embedded social relations
within the technological world. In turn, this curatorial approach supports a move
away from showing objects of art which are selected thematically to illustrate a
thesis and towards knowledge creation and sharing, a group effort exploring what
factors from our life experience.

A different method of defamiliarisation was developed by artist duo Eva and
Franko Mattes. In producing their artwork, Fukushima Texture Pack (Mattes and
Mattes 2016-current), they were given access to the Fukushima exclusion zone by
local community activists and artists in 2016. Funded by Creative Capital, the project
raises questions about image distribution online and the digital representation of
experience. It uses the extreme example of a nuclear disaster exclusion zone and
the uncontrolled circulation and adaption of images in the digital realm. The work
raises issues of the origin of images on the Internet, their continuous redistribu-
tion and the ethics of representation. A key part of this artwork is an algorithm
embedded in the images which trace their use by gamers in 'worlding' online envi-
ronments. It raises the question of who would be attracted to representing the site of
a catastrophe such as Fukushima and why. In this case, Eva and Franko Mattes are
conducting an active experiment by disseminating a material online and watching
what those engaging with that environment do. The practices here have addressed
the complicity of appropriation, representation and separation of imagery from its
'real-world' context.

In his essay 'Art as Device' in *Theory of Prose* (Shklovskiǐ et al. 1998), the
writer Viktor Shklovsky discusses the term 'defamiliarisation' explaining that it is
a device used by artists to make strange what is familiar to us and that which is
ingrained in our everyday experiences, which is a way of seeing the work by Eva
and Franko Mattes. Schlovsky proposes that defamiliarisation is crucial in order to
heighten our perception of the familiar. Eva and Franko Mattes use this strategy to
explode the perception and understanding of catastrophe, by slowing perception and
disconnecting image from context. In an accelerated world of image creation and
distribution, one could be driven to be near to what is already known and familiar,

which leads to the assumption that what is unsafe is what is not known. The combination of the fast and the transactional in our lives is generating an echo chamber or feedback circuit, especially when our knowledge exchange and our opportunities for the acquisition of new knowledge are formed around our URL arm of ourselves which is automised, boring, commodified, fast and transactional. Speed can make strange, startlingly so, but speed does not make strange or defamiliarise in a manner where one can discern processes and environments around the object that is being considered.

These examples of defamiliarisation unpick specific instances of interactions online and aim to raise consciousness of our implication within them. In relation to John Dewey, the experience of life and learning is in the knowing of society. Art practice is an act of knowing society, and knowing is integral to understanding how our commonplace cognitive encounters online are attributed to physical realities and how our actions contribute not just to stages of our own becoming but to a social reality. If we consider that our digital and physical selves have fused, then our insights into the complex social and technological developments of our time must analyse the depth and breadth of knowledge in relation to our society. Its capacity to be shared and created equally is tied up in the places we occupy for public exchange.

Hauntology

Who built Thebes of the seven gates?

In the books you will read the names of kings.

Did the kings haul up the lumps of rock?

And Babylon, many times demolished,

Who raised it up so many times?

… Every page a victory.

Who cooked the feast for the victors?

Every 10 years a great man.

Who paid the bill?

So many reports.

So many questions. (Brecht 1935)

'Who paid the bill? So many reports!' Brecht's Marxist poem is describing the inadequacy to represent humanity's great achievements through Kings rather than the workers who are central to the political, economic and social developments within modern western society. This raises the question of how progress is discussed in society and for whom progress benefits. Our digital age is not a million miles away from the same context, and it is a collectively edited and produced world but the Kings of Thebes in this instance are Google, Microsoft, Apple or Facebook. In order to imagine the future differently, Brecht speaks through the voice of a reading

worker, proposing that to see the present clearly and imagine the future, it is first history that should be non-discriminately re-evaluated in terms of who is credited for achievement and how power is understood and practised.

If we were able to take apart our surrounding environment, digital and physical, and start to understand how it is made, who controls it and the implications of our participation in it, we must also ask how we can strategically build networks which create meaningful knowledge and social change. In relation to a Lukácsian discussion (Lukács 1967) on ownership and the need for complete commitment to constantly maintain control over any adversaries, there is an often-unquestioned assumption that the promise of equality and emancipation in the Internet is tied to the freedom it offers to connect to a global network. In earlier phases of the Internet, closed networks were more common and driven by a need for a closed secure network to share information regarding a set project, local area networks (LAN) parties (epicLAN 2020) which brought together individuals and their computers to socialise in one space and participate in a chosen online activity together, like a computer game tournament. Unpicking the ambiguity and lack of transparency around social networks and knowledge exchange online, the challenge of building meaningful, collaboratively owned and led sites lies within our inability to make these sites materially accountable.

Georg Lukács considers that hegemony and power dominance have a class consciousness, he considers the possibility that class consciousness could transcend predetermined social power relations and become a tool of social revolution. Lukács notes:

> Everything hinges on the extent to which they can become conscious of the actions they need to perform in order to obtain and organise power. The question then becomes: how far does the class concerned perform the actions history has imposed on it 'consciously' or 'unconsciously'? And is that consciousness 'true' or 'false'? (Lukács 1967: 53)

Lukács proposes that the act of obtaining power is affected by a historical oppression. If the development of hegemony harbours a class consciousness, then the removal of arbitrary processes of economic jurisdiction needs to be reconsidered.

To consider how to create meaningful peer collaboration in terms of knowledge socialism, it is important to address the way we form our history. Different worlds have always been imagined; in folk tales we have made our world strange and diverse in order to understand it. In the second century CE, Lucian of Samosata's *A True Story* (1913) satirised the trickery of academics, creating myths as truth and wrote the first book including space travel, alien invasion and inter-planetary warfare but proclaiming them to be a lie, revelatory in their self-professed fiction. From this point, Francis Bacon, Isaac Asimov, Mary Shelley, HG Wells, Fritz Lang, Aldous Huxley, Stanley Kubrick an endless list of artists, filmmakers, musicians and writers have predicted a future some utopian, some dystopian, which reflected upon our present. This practice itself has now become part of a type of historical re-evaluation.

The recent music and poetry of Camae Ayewa (Moor Mother) and writings of Rhasheedah Phillips imagine a future based on the recognition of suppressed and oppressed historical narratives, questioning who has power and who has power

over the concept of time. Their work critiques the present through questioning the genealogy of the past. As Moor Mother notes:

> We are not separated from our past, we are still connected to our ancestors, time is not linear. That's not a wild and crazy thing, maybe for those stuck in their own viewpoint and ways of thinking. Linear time is oppressive. You should question everything. (Moor Mother 2018)

She questions these ideas through the music and poetry produced arising from the Black Quantum Futurist methodology, which considers time as a factor of constant, circular, historical and contemporary re-evaluation. There is a similarity here to the approaches of cultural theory and counterculture in the UK by theorist Mark Fisher when reconsidering hauntology.

Hauntology is the bringing together of ontology and haunting, and to paraphrase Derrida—there is nothing outside of the text. Its purpose is to consider that all we know is present due to a ghostly presence of what is not. The importance here is the absence such as the words yet to be written or the melody that was not played, what is beyond the thing happening. Jacques Derrida has considered the haunting or the ghost of ontology as the entity that encapsulates both the present and the not. Derrida focused on tele-technologies as examples, which are not just physical objects such as TV sets but things that can affect the perception of making time or space. Mark Fisher states that Derrida '[did not] live to see the full effects—no doubt I should say the full effects so far—of the "tele-technology" that has most radically contracted time and space, the Internet' (Fisher 2014: 35). This brings us to the Internet and Fisher's approach to hauntology. In this text where do those ghosts exist in the Internet-y part of our being. To implement a knowledge socialism, it might be important to consider what is said to exist and what cannot, it is a bit like being a dog on the Internet, and it restricts perception of knowing and shifts the experience of time and space.

Moor Mother and Rhasheedah Phillips founded Black Quantum Futurists, a literary and artistic collective and a practice of theory. It brings together the subjects of quantum physics, African theory and ritual. The collective outlines a set of Afro-futurist theories and methodologies in the publication *Black Quantum Futurism: Theory & Practice 1* (2015) which proposes a methodology for a re-analysis of the present day. It proposes that in quantum mechanics, interpretations of time, including causality and interactions, have more in common with indigenous African perceptions of time and society, than traditional Eurocentric concepts, such as chronological and linear time. Contributing author to the before mentioned book, Nikitah Okembe-RA Imani, proposes that in positioning an African-centred conception of time and space: 'one might look at the assertion of circularity, holism, and continuity in contrast to linearity, disjunction, and discontinuity' (Imani 2012: 101). This proposed perception of time takes a position on ontology that is against reductionism of linear concepts of being. It proposes that these outlooks produce a fragmented and exclusionary view.

A deterministic view of time's elements: history, contemporaneity and futurity, reinforces held beliefs, not challenging them but validating them through the rationale that they have developed from rational cause. This can then be dangerous if these 'rational causes' are justified from a select perspective, in this case, Western

European and predominately male. In a linear and exclusionary concept of time, both the protagonists of history and the forgotten, like the worker quoted above by Brecht, can forget the past. Some are in control of this collective amnesia in order to uphold a constructed historical narrative that upholds the community's values which are generally agreed upon at the time. Some in society are subjected to this amnesia and victimised by it. Moor Mother states that

> this is the notion of finding out that there are multiple temporalities. That not everything is based upon a Christian calendar - that we are not all headed toward doomsday and we are not all trying to forget our past. We are not all trying to copy the conquerors of our time, of European descent. It is looking into alternative histories, alternative views of the future. (Moor Mother 2018)

Black Quantum Futurism opened a community centre in 2016, the Community Futures Laboratory in the Sharswood/Blumberg neighbourhood in North Philadelphia to support practical anti-gentrification social and legal action as well as developing workshops with the community on how the Black Quantum Futurist outlook can be applied through practices such as music, visual art and poetry. A workshop called DIY Time Travel[2] explores how the community can create together as an act of healing, producing both collective, familial and personal experiences. It undertakes this by accessing past, present and future moments in time, breaking negative cycles in personal action and collective attitude.

However, the task has become complicated to create environments for understanding knowledge creation as we become increasingly mediate and disassociate with our own ontological processes, through an increasingly fast-paced engagement with and immersion in technology. Our day to day interactions are broken down into sequence, repetition and mediation; all are signals of distancing one's self from the real mechanisms of the everyday. These are processes where we separate ourselves from our environment. The versions of 'us' become separate and so, a fiction. In this temporal and ontological disjuncture, we participate in a never-ending stream of experiences. The disassociation of the versions of ourselves makes it more and more difficult to find clarity as we are haunted by traces of the past version we created and that are either completely inauthentic or are skewed alternations of the truth. Mark Fisher describes through Derrida's concept of hauntology.

> with globalization, ubiquitous computerization and the casualisation of labour – resulted in a complete transformation in the way that work, and leisure were organised. In the last ten to fifteen years, meanwhile, the Internet and mobile telecommunications technology have altered the texture of everyday experience beyond all recognition. Yet, perhaps because of all this, there's an increasing sense that culture has lost the ability to grasp and articulate the present. Or it could be that, in one very important sense, there is no present to grasp and articulate anymore. (Fisher 2014: 23)

This situation concludes that technology operating with the ideology of neoliberalism is a development-stunting usurper. We are prevented from seeing the everyday clearly

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[2]See https://www.blackquantumfuturism.com/workshops. Accessed 28 September 2019.

because we are neurologically fixated upon the past, unable to move beyond it. In the artworks and music that Fisher ties to hauntology, there is an obsession with death. A prolonged haze that mourns for the past reliving it moment by moment, through intangible, scrambled and sentiment-driven recollection. The artist Lynn Hershmann Leeson states that:

> we have become a society of screens, of different layers that keep us from knowing the truth. It's as if the truth is unbearable and too much for us to deal with, just like our feelings. So, we deal with things through replication, through copy, through screens, through simulation, through facsimiles, through fiction and through faction. (Leeson 2018)

In her recent work Vertighost[3] (Leeson 2017), she remakes as an interactive artwork, a scene from the Alfred Hitchcock film *Vertigo* (Fine Art Museum, Legion of Honour, San Fransisco). She states that, 'it tells the haunting story of that history. In telling the history we release the ghost that we keep hidden' (Leeson 2017). In Hitchcock's film, the character Madeleine Elster claims that she is haunted and possessed by the subject of a painting 'Portrait of Carlotta Valdes', who committed suicide. She visits the painting in the museum, modelling her dress and hair on Valdes, even carrying the same bouquet, visiting places associated with her. Eventually, Madeleine Elster commits suicide.

To this end, the attempt to formulate a different scenario needs to acknowledge the relationship between the perception of knowledge and the reception of knowledge. This formulation of work against instituting power is not different to what Bertolt Brecht attempted when changing the formulas between who is actor and who is viewer. The Black Quantum Futurists' position highlights the importance knowing of who is playing the roles of actor and viewer. The relevance being the rethinking of the relationship between perception and reception is an attempt to search for that site where we have the possibility to choose and move beyond with our past, in a collective fusion of the many versions of ourselves.

Conclusion

The aim of the chapter has been to frame practices of institutional critique within art making through the lens of knowledge socialism. The chapter has considered how the sense of self occurs through a knowing of society. Considering art as lived experience, hauntology and the described art practices throughout this chapter are to demonstrate how a knowing of society can be formed in art practice through a critique of its institutions, and this may be due to the nature to define oneself by what it is not or against. Knowledge socialism—for art practice—is a process of asking what is knowledge under capital, but also how can we develop imaginaries

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[3]More information at https://www.vertighost.net. Accessed 28 September 2019.

of the methods of knowledge exchange we use. If intrinsic aspects of knowledge exchange and production are entrenched in a neoliberal ideology, then these facets of knowledge frame our sense of self through our everyday actions. The challenge is in creating a consciousness of these intrinsic processes which direct knowledge and its dissemination, and a consciousness of who owns them. The chapter has covered different aspects of current developments in communication and exchange and their effects on knowledge and society. An analysis of the development of digital and knowledge economies in HE was used to question the automation of the learning experience for economic profitability. This was framed through ideas presented by Bourdieu around the distinction between mercantile and non-mercantile types of exchange and Peters' consideration of knowledge socialism towards a public good and away from knowledge capitalism.

The chapter has also examined the construction of 'being' and the idea of a common knowing of society in the digital age. The importance of conflating our URL and IRL selves is advocated, in order to overcome the alienation addressed through hauntology and the issue of having multiple, fictitious versions of the self. To paraphrase Derrida, there is nothing outside of the text and through the examples of Brecht and the artist project Black Quantum Futurism, the importance is considered of knowing what is present and what is not within processes of knowledge exchange. Artworks and examples by Cassie Thornton (2015) and Xenofeminism (2018) were used to demonstrate the dehumanising, financially driven logic of neoliberalism. The curatorial work of Dani Admiss (1997), as well as the artist duo Eva and Franko Mattes (2016), has drawn connections between initially invisible, embedded social relations within the technological world. The chapter has attempted to frame the effects of the digital upon the production of society and how these shifts in a neoliberal framework have influenced the reality of how knowledge is exchanged.

In a class with my BA Fine Art Students recently, we were talking about the speed in which change happens—and the increase in changes in technology and digital engagements. Most of my students now are born post Y2K (Year 2000) and have no experience of a pre-instant messaging world. We talked about things that initially felt like a breakthrough. The class talked about how preceding things have already been replaced by fresher and more 'innovative' things. The worlds that the previous technological developments were responding to have been replaced.

As a class, we came to the conclusion that the digital and the social are intertwined but the ownership of these developments is only in the democratisation of the knowledge of the technological developments. The constant progression of technology has radically changed how we interact and perceive the speed and idea of development itself. Progression, as mentioned in the hauntology section, produces a linear and exclusionary concept of time. Both the protagonists of history and the forgotten, like the worker quoted by Brecht (1935), can capture or forget the past. One thing we can be certain about is the consistency of change. Since those effects continue to evolve, the development of peer collaboration and the telling of historical facts will consistently fight against the harsh realities of knowledge capitalism. The artists we have looked at have attempted to figure out what it means to create transparency in our distribution of knowledge from digital culture to institutional critique, and

this chapter is attempting to draw parallels to the development of the concept of knowledge socialism.

The crashing together of institutional critique and knowledge socialism in the introduction was to frame the way in which to consider the thoughts and practices of the artists mentioned in the preceding text. The method of the chapter, to view the power relations that control and define how knowledge, is exchanged, seen or experienced. This is why we have felt that knowledge socialism is a vehicle in which it is possible to frame this endeavour. Our aim focuses on forming an understanding of what can be called practice in the age of capital or more specifically what can we call beyond capital if everything we produce becomes product. The purpose of the chapter is to frame contemporary art practices responding to institutional structures within the concept of knowledge socialism. The focus demonstrates how current art practice (especially contemporary digital art practice) attempts to understand the current relationships of knowledge exchange and social conditions in a way that is not to dissimilar to projects of knowledge socialism from a social science perspective. The chapter explores the potential inviolably in art practice and the academy to imagine new or different worlds. Knowledge socialism is one key part in this imaginary.

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Dawn Bothwell is an academic, curator and musician based in Newcastle. She curates and programmes contemporary art with CIRCA Projects, The Northern Charter and Bad Spirits, and currently working at Newcastle University. Bothwell's practice has ranged from facilitating large-scale curatorial events across the country to producing alternative modes of artistic collaboration.

Her PhD at Sunderland University (2019) developed a set of Intermedia behaviours to read art history and explore counter neoliberal methods of curating in regional contexts.

Paul Alexander Stewart is an academic, artist and curator based in Newcastle, who makes curatorial and installations, videos, drawings and performative works through text, sound and karaoke questioning ideas of power, a senior lecturer in Fine Art at Teesside University, PhD (2018) Teesside University titled: 'Art and Hegemony: Critical Pedagogy as a Methodology in Art Practice,' MA Art and Politics, Goldsmiths College, BA (Hons) Fine Art from Lincoln University (2011), co-founded the Middlesbrough Art Weekender (2017-present), The Alternative Art College (2010–2014), and currently co-running Bad Spirits (2018-present).

Part IV
Conclusion

Chapter 15
The Highway Robber's Road to Knowledge Socialism: A Collective Work on Collective Work

Check for updates

Andrew Gibbons, Marek Tesar, Sonja Arndt, David W. Kupferman, Daniel Badenhorst, Liz Jackson, Petar Jandrić, Zhu Xudong, and Michael A. Peters

A. Gibbons (✉)
Auckland University of Technology, Auckland, New Zealand
e-mail: andrew.gibbons@aut.ac.nz

M. Tesar · D. Badenhorst
University of Auckland, Auckland, New Zealand
e-mail: m.tesar@auckland.ac.nz

D. Badenhorst
e-mail: dbad658@aucklanduni.ac.nz

S. Arndt
University of Melbourne, Melbourne, Australia
e-mail: sonja.arndt@unimelb.edu.au

D. W. Kupferman
Minnesota State University, Moorhead, USA
e-mail: david.kupferman@mnstate.edu

L. Jackson
Hong Kong University, Pok Fu Lam, Hong Kong
e-mail: lizjackson@hku.hk

P. Jandrić
Zagreb University of Applied Sciences, Zagreb, Croatia
e-mail: pjandric@tvz.hr

Z. Xudong · M. A. Peters
Beijing Normal University, Beijing, China
e-mail: zhuxd@bnu.edu.cn

M. A. Peters
e-mail: mpeters@bnu.edu.cn

P. Jandrić
University of Wolverhampton, Wolverhampton, UK

Introduction

This chapter presents a set of collective responses to the propositions and provocations raised in Michael Peters' essay 'Knowledge socialism: The rise of peer production—collegiality, collaboration, and collective intelligence' (2019). As authors, we have employed a collective way of writing, performing the act of weaving, where each response takes up a permutation or gaze, with Peters' voice stemming from the original text, as an oracle, so-to-speak.

This proposition that the text is something of an oracle presents a confounding introduction to this collective work on collective work. The essay makes abundantly clear that Peters has generated a significant body of work on both the theorization and performance of knowledge cultures, knowledge socialism and knowledge capitalism. His thoughts on knowledge production (and academic labour) are well known and resolved, in part, into producing a methodology of collective writing (Peters et al. 2016).

For Peters, the vantage point of knowledge socialism is in part to push back against, deconstruct, or otherwise critically engage with, the individualization and proprietization of knowledge. As such, there's something important to state about the role of scholars, academics and their individual contributions towards the collective product. This might be understood as a tension between what is referred to as a peer production and a collective intelligence that engages some sticky terrain on the possibility or impossibility of the peer-collective relationship. The concern then becomes, how do we make sense of one individual academic's significant contribution when that contribution is to challenge the very idea of the individuality of contribution?

While the tensions between knowledge socialism and knowledge capitalism are not reduced to the problem of a particular individualization or atomization of the subject, this is surely a significant dimension and perhaps at times a paradox or *aporia*. As an aporia, following Derrida's (2000) work, the road to knowledge socialism is in some way barred by the very idea of the academic. Derrida has described the paradoxes that challenge the ideas of acts such as hospitality, giving a gift or forgiving. Similarly, returning to the idea of the knowledge socialism, collective intelligence and the academic oracle, we do perceive that there are significant points at which the road is obstructed or barred. This chapter explores some of those points as a means to take seriously and to take on the ideas and challenges in Peters' essay.

Peters' work, with its emphasis on 'shared practices' (Peters 2019: 3) evident only in part in this paper on knowledge socialism, has long determined to protect the notion and practices of the academic being and production. His work is evidence of a commitment to 'collaboration, sharing, collegiality and the peer economy' at the same time as having had no small benefit from the trajectory of 'the neoliberal university' (Peters 2019: 2) that exploits these collective academic labours, and the academic publishing companies, which exploit the neoliberal university. He argues that knowledge capitalism 'is parasitic on knowledge socialism' and in particular on the 'free and frank exchange of ideas based on the model of peer review' (Peters 2019: 6). These are the key statements to unpack.

Of course, to even to use the phrase, *Peters*' *work* contributes to the problem that we have outlined above. It is not and will never be Peters' work, while, at the same time, it is and will always be Peters' work. There is no essay, nor is there no chapter, without Michael A. Peters. And, perhaps, there is no Michael A. Peters without the essay. Or perhaps it would be better to say, there is no Michael A. Peters in this particular configuration of the subject that is intimately constructed in and through the essay, if we are to take that subject as at the same time many subjects. Our concern here is not to dwell too much in recognition of Michael A. Peters, although based on his body of work that would seem to be a worthwhile and time-consuming place to dwell for any academic biographer—and an important story to tell on the road to knowledge socialism.

Returning to the problem of the free and frank and collegial and collective exchange of ideas, this chapter itself emerges within a wider project, on that road, of not just peer review, but peer production that consists of editing, writing and publishing. Peters regards this wider project as a movement in which knowledge socialism is explored and enacted philosophically. The movement's purpose is to amplify 'collegiality, collaboration and collective intelligence' (Peters 2019: 8).

Knowledge Socialism, Alienation and a New Thought Collective (David W. Kupferman)

The use of the term 'knowledge socialism' in Peters' article is predicated on two basic notions: first, that it is intended as a critical response to the growing acceptance of the terms 'knowledge economy' and 'knowledge capitalism'; and second, that it takes as its framework a Marxist approach to reading the political economy of these two latter terms as they impact the academy and its systems of knowledge production. While there is much to agree with in the diagnosis laid out by Michael Peters in regard to this description of knowledge socialism, it is helpful to respond to these two notions out of turn.

In his *Economic and Philosophic Manuscripts of 1844*, Karl Marx (1978a) outlines the four ways that workers become alienated from their own labour. These aspects of labour alienation are increasingly appropriate when we think in terms of knowledge production in the academy, especially given the current neoliberal moment that prizes innovation, technical fixes, more and faster publication of articles, and journal impact factor over the development of ideas. Indeed, knowledge capitalism doesn't even need ideas; it needs only endless variations on already established themes. In this way, we see the alienation of the academic from their own knowledge labour; the alienation of the academic from the processes of the production of that knowledge; the loss of one's *Gattungswesen*, or species-essence, whereby scholars lose their connection to the academy through the constant market commodification of their ideas; and the alienation of academics from each other, the more we are forced to operate in a reputation economy, what Hall (2016) calls the 'Uberfication' of higher

education, marked by all of the clicks, likes, views, and followers on platforms such as academia.edu.

The academic publishing market, with its tens of thousands of journals (let alone the articles that make up any issue of a given journal) and tens of thousands more books published in a year, has reached what Bastani (2019) calls the 'extreme supply' of capitalist production. No one is going to read even one hundredth of a per cent of any of this, rendering so much of the knowledge economy to data points—and the ideas therein as irrelevant. As a result, very few people pay attention to ideas expressed in these publications, and academic knowledge production is measured not on its merits but on numbers of citations (and not how those citations are used in real, intellectual terms). This is not a matter of an extreme supply of *good* ideas, or even of ideas at all, but rather of a system of knowledge production for its own sake, all the while admonishing academic writers to publish ever more, ever faster, regardless of what it is that those writers actually think or write. Consequently, knowledge capitalism now functions in the vein of multi-level marketing (think Amway and other assorted pyramid schemes), wherein academics become the end-users of their own publications. If no one else will cite their work, then they will.

This phenomenon has led Kelly (2019) to call for a moratorium on academic publishing, at least in the field of educational studies. But, while such a call is all well and good for those who have tenure (and can therefore afford to make such calls), for those who do not have tenure, the experience is one of a seemingly endless cycle of alienation from ideas, from fellow academics and from their own selves, in order to satisfy the demands of knowledge capitalism in the academy. Alienation here is compounded by the structures in which academics operate *as* academics and reproduces those very neoliberal structures. Meanwhile, this extreme surplus of knowledge production rots in the fallow fields of academic purgatory.

Which leaves us with the question of knowledge socialism. The premise behind this concept is that knowledge should be socially produced and provide some social good. What is missing from the discussion, however, is just how this will happen. How do we transition from knowledge capitalism to knowledge socialism, in the way we transition from a capitalist economy to a socialist one? As the saying goes, a map is not a territory, and so, the task before us is how do we begin to make a territory of the production of knowledge for the social good, and in opposition to the alienation of labour in a knowledge economy? In other words, how does knowledge socialism move from being a tactic to being part of a larger strategy?

What we need is a Mont Pelerin Society for the left. One obvious solution is to look at the neoliberal playbook and co-opt it for ourselves. In order to have any kind of meaningful social impact, knowledge socialism needs to do two things simultaneously: not only create the conditions to produce social knowledge, but also to then be accessible to larger audiences. Knowledge socialism must move beyond the elitism and closed system of the academy, so that it is not just another term that in fact reproduces the aspects of knowledge capitalism that we are familiar with. In other words, we need to stop talking to ourselves and begin writing for non-academic audiences. We should think beyond the confines of the academic journal or edited volume. No one whom we are trying to reach is going to shell out $55 for a journal article or

$150 for an academic book, and most of them likely do not have access to those articles or books through academic libraries. We need articles and books, and the ideas they convey, that people are going to find and actually read. In order to do that, we have to use language which is accessible. We don't have to write with academic language (and in fact there is no compelling reason to do so.) We write in obtuse language because we're not actually writing for anybody, but rather for knowledge as a commodity. We write for algorithms, not people. Knowledge socialism, on the other hand, is a writing to be read, with and by others.

There are also structural changes we need to go along with clearer, simpler writing. We need to measure the value of knowledge production differently, with social impacts and not Q Factors. This revaluing of knowledge offers the chance to also revisit the purposes of universities and research in general. Like the Mont Pelerin Society demonstrated in the 1960s and 1970s, universities are ripe for co-optation as think tanks and training grounds for what Srnicek and Williams (2015) describe as 'second-hand dealers'. In short, we need a Thought Collective that is informed not by neoliberal market reforms and the privatization of the common good, but one that is informed by a knowledge socialism that prioritizes (rather than profits from) society. Perhaps, the social development of this chapter might serve as a rudimentary example or first step of such a collective.

In other words, we need a different type of structure. If, as Marx (1978b) suggests in *Grundrisse,* we are going to use capitalism to fully automate human capacity without having to engage in constant capitalist pursuits to meet basic needs, we should look to do the same in terms of liberating social knowledges. Knowledge socialism must be accessible as part of a larger political project, and it must be tied to a new academic politics. It does no good if it remains the purview of only those who can afford to participate in it and access it. In order to work against the continued alienation of the academic from knowledge production, and the alienation of the public from that knowledge, knowledge socialism needs to become part of a grander social strategy.

Criminal Alternatives for (Knowledge) Socialism

Drucker (2000: 271) wrote, in what might be considered by us 'knowledge workers' as an oracular capacity, that the 'knowledge workers also require that demands be made on them by knowledge rather than by bosses'. It would seem that Drucker diagnoses the contemporary plight of the academic, torn between the demands of the market and the pursuit of a question, a line of inquiry, of knowledge itself. The bureaucrat who knows what is good for them will have read Drucker. In those pages, it is not Drucker the man who speaks, but Drucker the instrument of science, when science is understood as collective social capacities for thought as it is directed towards the greater extraction of profits—that is, when it is understood as Marx outlined it in the first volume of *Capital* (2010).

Drucker diagnoses so that capital can more readily capture. And yet Drucker's diagnostic cuts both ways. While his book is written as a free contribution to the ongoing domination of the human being by our dead labour, this same book identifies the way in which this domination stalls, the way this domination can fail. When Drucker (2000: 271) argues that 'we need something that higher education has never known it needs: we need managers' he does not speak for us, but he does indicate our task: *we need to become unmanageable.* A knowledge worker that 'just gets by', Drucker argues, 'is not productive' (2000: 271). Management's task is to ensure the scholar's continual striving towards excellence in their field, which really means exhaustion, excellence that results from the truncation of those other pursuits that make us human, or rather an amputation of parts of ourselves. Publish or perish? No, publish until you perish. As in Jacques Lacan's analysis of the mugger's choice, your money or your life, the choice was never a real one. But here, the outcomes are grimmer. To avoid immediate perishing, the academic simply submits to the slow but nevertheless sure giving away of their selves, piece by piece. The solution for Drucker is to change careers once the potential and passion runs dry. Once again, Drucker anticipated all outcomes—he knew the fate of the academic as knowledge worker.

It is precisely against this fate that we must militate. That is, we must make ourselves unmanageable by dint of our unproductiveness, that is, by dint of our refusal of the forced choice that accompanies contemporary knowledge work. We must embrace the temporality of just getting by as the mode that knowledge production ought to take. Not only does this speed, or lack thereof, allow one to linger with the thoughts, findings and encounters that we may be partial to, it also is unproductive, and in a world in which productivity is all that counts and yet productivity threatens life, unproductive knowledge production is the only alternative. This alternative takes seriously Harney and Moten's (2013: 26) claim that 'the only possible relation to the university today is a criminal one'. Criminality is the alternative to the perish-publish predicament.

Is knowledge socialism a way to embrace an alternative to the criminal alternative? Will it allow us to refuse and in refusing to resist the rapacious role that economy plays in relation to knowledge? The critique of the university and its functioning is as old as the university itself. The institution is what it is on the basis of criticism and would be incomplete without this inward turn. In this very gesture, it reproduces itself. The critique of the institution and its reigning ideologies and practices ought not to be considered anti-institutional but as constitutive of the institution itself.

> Worry about the university. This is the injunction today in the United States, one with a long history. Call for its restoration like Harold Bloom or Stanley Fish or Gerald Graff. Call for its reform like Derek Bok or Bill Readings or Cary Nelson. Call out to it as it calls to you. (Harney and Moten 2013: 26)

Across the globe, the university is this very activity of worrying about itself, and in worrying, one finds oneself interpellated, on its grounds, not only in the university but of it. Can knowledge socialism be understood within this same constitutive relationship of self-worry? Knowledge socialism is certainly worried about something.

It responds to a problem in knowledge production and addresses itself to these problems with force. The concept, according to Peters, serves to emphasize the sociality of knowledge production and therefore to demonstrate in defetishing gesture, which nicely parallels Marx's, that knowledge production and consumption is really a relation between people. The practice, on the other hand, consists in subverting resources, official and unofficial channels for the public good, in order to promote 'the sociality of knowledge by providing mechanisms for a truly free exchange of ideas enhanced by peer review' (Peters 2019: 6). This in turn means reconceptualizing knowledge work. Such work takes on the form of what Benkler (2006) calls 'commons-based peer production' and which Peters, along with others, extends towards a reconceptualization of knowledge work as creative labour defined by a 'radical openness' (Peters 2019: 7).

This practice and conceptualization of knowledge socialism culminate in Peters' call for a creative university based upon collective intelligence and co-creation or peer production. Such a university would be a space for the expression of common knowledge production, or creative labour supposedly outside or surreptitiously internal to the knowledge economy, a real alternative to the financialized academy moulded by the capitalist economy in its own image. Knowledge socialism is thus primarily worried about knowledge and its production. It worries precisely about the university, about its disciplines, its isolation and its potential openness. Drucker already knew this. The knowledge worker, he notes, is concerned about their conditions of production, they reject the boss, they rally against isolation, and they work collectively across disciplinary silos. Knowledge work, or so Drucker sees it, is essentially collective, collaborative and has knowledge for knowledge's sake as its ideal. The problem, once again, is the management of these workers, or their anti-authoritarian tendencies, or their anti-capitalist proclivities. Is knowledge socialism able to counter management; that is, can it evade capitalist capture? If knowledge work is always inherently creative, social and in pursuit of a higher ideal, then what does knowledge socialism name except the same thing already named knowledge work by Drucker?

All 'our' goods are created via a social production that is not apparent to us due to our social intercourse being mediated by the obscuration of wage relations (Marx and Engels 2010). Perhaps, it is necessary then first to abolish the capitalist mode of production, that is, the mode of production which makes asking these questions about the final ends of our social production impossible, for profit, is always the end towards which our social activity is organized. Then, we can collectively deliberate as to the ends towards which we strive as humans producing always already in common, consciously, for it is the conscious nature of this social production that distinguishes an alienated and disalienated productive activity, and not simply its individual or social nature (Hägglund 2019; Marx and Engels 2010). In fact, it is the fact that we consciously produce and reproduce each other and can choose the ends towards which our production is directed that distinguishes us from the animals as well (Hägglund 2019; Marx and Engels 2010; Pinkard 2012).

The gesture of choosing to reproduce Drucker's always already compromised division of skill and knowledge work reproduces that stultifying division between the knower and the not yet educated and ever again under-educated who have been

robbed of the certainty that they, as Rancière (1991) says, have 'abilities'. This reproduction is the very lie upon which the university is founded. This lie not complicit in the production of the university as a place of masters against the people, the university as against the social. If we already know that knowledge is a social product, then Drucker's hard line between skill and knowledge work and between labour and creative labour becomes impossible to draw. The poor, the non-white, the non-knowledgeable are already of the university, and the point is to realize this and thereby to refuse the line itself.

But this refusal is not a conceptual one. If knowledge socialism is to be anything more than that which identifies that knowledge is a social product, it must refuse this line to begin with and effectuate this indistinction in practice. This means recognizing that human labour is essentially creative and thus that its task ought to be the process of making knowledge a product of each and all. It must champion a political practice based upon the equality of intelligences, that is, it must affirm that people think. The task cannot be directed simply towards improving our conditions of production. It must be about freeing people from the inhuman imperative to produce for profit so that they too may be human and creative. That is, knowledge socialism is nothing more than a statement about the inherently social nature of all production unless it is also actual socialism, which means above all else a struggle to free all human beings from the imperative to produce surplus value come what may. Only then would knowledge be truly social because then creative labour would be the possibility of each and all.

This is a mode of resistance that Drucker could never anticipate. He was unable because he thought that the advent of scientific management had rendered class struggle, the struggle of human beings against capitalism as an inhuman force obsolescent. The proliferation of creative labour, that is, the extension of the possibility of the cultivation of the human faculties across all segments of society was the end towards which Marx's critique of the capitalist mode of production was geared. There is no knowledge socialism for whom the end is the betterment of the conditions of privileged knowledge workers. There is no such thing as a worker who is not also a knowledge worker and a university that is not at the same time a cite of back-breaking manual labour. In recognizing that university labour, we reopen the possibility of a truly criminal relationship to the university, not one that worries about reforming and rebuilding it. But one that wants to see creative knowledge work burst forth from out of its walls, into homes, bars and shop floors and, as we explore below, early childhood centres.

And, perhaps, as Kristeva refers to the power of narrative, this strategy inheres in the infinite of the plurality of its sharing, as she says:

> It is through narrative, and not in language itself, which nonetheless remains the way and the passage, that essentially political thought is realized. Through the recounted action that is a narrative, man corresponds to life or belongs to life, in that human life is inevitably a political life. Narrative is the initial dimension in which man lives, the dimension of a political life and/or action recounted to others …and narrative is action most immediately shared … and because of narrative, the acknowledged "initial" itself is dispersed into strangenesses in the *infinite* of narrations. (Kristeva 2000: 72)

Knowledge Socialism and Early Childhood Nexus

In this section, we engage with knowledge socialism within the context of early childhood education with a particular focus on the role of academic knowledge and academic publishing. We begin with reflections on collective experience—conceptualized above—and then draw out some connections between those experiences and perceived challenges and problems that face, and at times are perpetuated by, early childhood education. Here, the very construction of a professional knowledge and discourse in early childhood education is an exemplar of the problem of knowledge capitalism and the challenge for knowledge socialism.

For three of the authors of this collective work, our professional lives have taken something of a shared road. We have been student teachers, teachers, teacher educators, researchers and editors at different times. Early childhood is a common thread through this collective experience; whether experiences as scholars, teachers, parents or children. As such, in experiencing these different dynamics, we have recognized enduring challenges. One particular challenge could be considered a developmental challenge. What connects us is a realization or approach through which we are hesitant to regard shifts in experience in a developmental way. In other words, transitions from student teacher through to editor are not, for us, traced along a developmental hierarchy. This is not to say that there's no hierarchy, and that there's not structural or systemic inequality. But it is to say that where these hierarchies exist and are experienced, they are a problem for us. Why do they appear as a problem to us? One answer to that could be in the reading that we have done. To read, for instance, Havel, Foucault, Kristeva and Camus, is to recognize and reject these hierarchies as a form of ideology:

> In an era when metaphysical and existential certainties are in a state of crisis, when people are being uprooted and alienated and are losing their sense of what this world means, this ideology inevitably has a certain hypnotic charm. To wandering humankind it offers an immediately available home: all one has to do is accept it, and suddenly everything becomes clear once more, life takes on new meaning, and all mysteries, unanswered questions, anxiety, and loneliness vanish. Of course, one pays dearly for this low-rent home: the price is abdication of one' s own reason, conscience, and responsibility, for an essential aspect of this ideology is the consignment of reason and conscience to a higher authority. The principle involved here is that the center of power is identical with the center of truth. (Havel 1985: 43)

Camus explores these hierarchies from the perspective of the artist as a deceptive luxury that can be extended to the academic. He reflects:

> On the poop deck of slave galleys it is possible, at any time and place, as we know, to sing of the constellations while the convicts bend over the oars and exhaust themselves in the hold; it is always possible to record the social conversation that takes place on the benches of the amphitheatre while the lion is crunching the victim. But things have changed somewhat, and the number of convict and martyrs has increased amazingly over the surface of the globe. (Camus 1995: 252–253)

Camus is concerned with the lie that art might be, and here again, the university and its exploitation of the early childhood teaching profession might be seen as something

of a lie through which it is possible to separate the teacher and the community from a knowledge of childhood.

However, the shared entrusting in the problem 'of hierarchy as ideology' is more than just a collective reading of certain scholars and thoughts. There is a more profane and mundane common experience between the collective. What that might be has to be left in some ways to the domain of intuition, rather than precise analysis. It's not possible or even desirable to provide a static truth to our common experience. Whatever it is, it brings us together to write about knowledge socialism with a sense of intensity that comes about from years of advocacy, and the ongoing, persistent, enduring, and at times overbearing, negligible differences. For instance, in the past, we wrote:

> We are intrigued with the ways knowledge is shared, shifted and constructed during the daily work of early childhood teachers-specifically with how teacher education impacts upon the experience of these flows of knowledge, how both beginning and experienced teachers reflect upon and discuss construction and sharing of knowledge, how knowledge relationships and environments are formed and altered, and how these relationships and environments impact on the curriculum. Such knowledge might include knowledge of child development, subject knowledge, pedagogical content knowledge and knowledge of the children and families. (Tesar et al. 2017: 787)

These experiences are critical to an understanding of the relationship between the knowledge of the early childhood teacher and the knowledge of the early childhood scholar. The task for us as writers and editors is then to explore how scholarship can both obscure and reveal (in an entirely Heideggerian sense) that which is the essence of knowledge in early childhood education. There's a significant epistemological problem that faces all academic publishing and that has particular manifestations in early childhood education in part due to the enduring identity crisis for early childhood education as a profession. Early childhood education is a profession that continues to be challenged by its identity. Arguably, more than most professions, the early childhood education profession does not think it's taken seriously as a legitimate profession. The early childhood education strategy employs the notion of innovation as central to quality of teaching practice and outcomes. Innovations in digital curriculum experiences are highlighted as a critical innovation. 'This was a kind of unvarnished technological determinism thesis about technology-led development in the knowledge economy.' (Peters 2019: 1)

The importance of a profession and professional knowledge has been associated with quality of provision and outcomes since early pioneers including Froebel, taken up in early twentieth-century government but not taking hold until the late twentieth century with the massive expansion of the early childhood sector. It is important to keep in mind that this expansion has many drivers. Some drivers have served to legitimate other drivers. The relationship between drivers provides a case in the tendency of capitalism to massage programmes for justice into business opportunities. Put simply, academic publishing in early childhood education serves the knowledge economy and generates an education market that is largely very profitable for early childhood education entrepreneurs, even when the focus of that publishing is the critique of the market and of for-profit early childhood education services.

The history of the field is forged in an altogether different paradigm. Helen May's (2019) history of the early childhood sector highlights the distinctly unacademic (whatever that actually means) rise of the sector without which there would be no scholarship and no jobs for editors. The growth of the early childhood teaching profession as a profession is intertwined in some way with the growth of academic publishing in the field of early childhood development, curriculum and pedagogy, and in the politics, history, sociology and philosophy of early childhood. Academic careers are forged in this growth. Academic journals and their editors make this possible, although they are not the only instruments that could have made this possible—there are other ways and other models that could apply to the development of status and contribution in a field.

Peters (2019) notes that concepts like innovation become slogans that embed in educational policy and practice. In early childhood education, this practice has a number of manifestations, and perhaps, most notably, changing the emphasis of children's experiences of care and learning, and changing the ways in which teachers care and learn. But more than this, the discourse becomes a blueprint that has both tacit and explicit functions in governing the teacher, the learner and the curriculum. This technological determinism impacts on more than the curriculum… it impacts on the professional identity of the teacher and on the ways in which teachers form teaching teams, centre communities and the teaching profession. The problem with this focus on knowledge as part of a technological society is its inevitability and its ubiquity. Talking about ubiquitous computing should be pejorative rather than utopian. Hence, early childhood education teachers are immersed in the swamp of modern forgetfulness.

One disruption to attend to here is the idea that shared practices must be made to happen, and that there is a condition in which there is the absence of sharing. This idea requires disruption in part because it maintains a paradox of emancipation (as in Rancière's work). The point here is to understand practices as always already shared. There are no new preconditions that are required, no new code, or ethic that will be required for 'non-proprietary modes of production and exchange' (Peters 2019: 4).

This is a critical tension in early childhood education. Theories of development and curriculum, pedagogy and professionalism are essential to the legitimation of the sector at the same time as they create rifts in the sector. Disciplinary knowledge commodifies early childhood education. Yet this knowledge is drawn from early childhood education and observation of informal and traditional practices, practices that communities have submitted to the observation of researchers for decades. While the academy might point to the benefits for communities of shifting its research out of the laboratory and clinic, the distribution of value of research and knowledge needs to be understood more clearly.

A critical task for early childhood scholarship in relation to this problem is to recognize the error of propriety that drives knowledge capitalism. This error is decisive in making the exploitation of early childhood teachers and early childhood knowledge possible. This involves understanding knowledge's social roots as already existent and the impossibility of knowledge without these roots. Then, the question becomes, how is it possible for this knowledge to be deprived from some groups?

Unlike knowledge capitalism, which relies on exclusivity - and thus scarcity - to drive inno-
vation, the socialist alternative recognizes that exclusivity can also greatly limit innovation
possibilities. Hence rather than relying only on the market to serve as a catalyst for knowl-
edge creation, knowledge socialism marshals public and private financial and administrative
resources to advance knowledge for the public good. (Peters 2019: 6)

Openness: A Burdened Virtue of Socialist Knowledge Production

Peters (2019) observes that knowledge production practices associated with the
academic journal undergird a sense of knowledge socialism. As Peters writes, any
notion of knowledge capitalism is 'parasitic' on knowledge socialism, as knowledge
is rooted in social relations. In the case of the academic journal, peer review remains
the major mechanism for evaluating new knowledge claims within an academic
community. As discussed in a previous collective work by the Editor's Collective
(Jackson et al. 2018), peer review may not be sufficient in and of itself, however.
People may (intentionally or unintentionally) construct biased reviews that function
as gate keeping, while within the material and economic organization of academic
labour conducting productive reviews can be seen as a kind of 'hidden labour',
as another means for exploiting and preoccupying increasingly disenfranchised
academic workers.

Knowledge production and peer review as one aspect of it require openness, as
Peters notes. The virtue of openness may be seen as an enlightenment value, as in
Kant's articulation of public reason as founded in the voice of democratic knowledge
collaborators. However, ideals of western modernity also invoke critical questions
about the universality of human experience, and whether all people's voices are really
enabled in a so-called international or global conversation. While openness surely
remains vital to knowledge production, in the era of knowledge capitalism (parasitic
on knowledge socialism), openness is at the same time a double-edged sword. While
openness may be a virtue, it may also be 'burdened' (Tessman 2005), as one considers
who is expected to be open, and to whom.

When knowledge capitalism is foregrounded, those who profit from the sense of
resource scarcity of higher education institutions, and from the apparently individ-
ualized production and privatization of knowledge, are less burdened to be open to
others, who negate, question, or problematize claims about single authorship over
ideas and intellectual property rights, vigorously obtained while access to knowledge
shrinks around the globe. On the contrary, Peters and other proponents of knowledge
socialism (such as the Editor's Collective) must entertain, as fairly as possible, the
alternative views they face, such as that higher education must sell itself to consumers
in order to be sustained, in order to establish a dialogue. In this sense, openness is a
socialist value, while it might be regarded as a vulnerability to attack by a knowledge
capitalist. Only knowledge socialists see openness as essential, enabling disparate
expectations and framing openness as a burdened virtue, as those who deny that
knowledge is social simultaneously deny openness as a knowledge value.

Relatedly, vulnerability is framed as weakness in neoliberal environments where the individual is primary. Yet from a relational view, vulnerability is essential to what it means to be a learning person within a community context, with capacities for creativity and understanding in relation to the possibility that others might see things differently than they do, or that they might be wrong (Jackson 2018). Vulnerability is a bad thing in a university where students must submit their own individual work, while academics are evaluated only in terms of *primary* (first-person) authorship, or being the *principal* investigator. In neoliberal environments a vulnerable university is in a weak situation, because competition is valued over collaboration. Yet a vulnerable organization or individual is also one who is open to learning from weakness and seeing things from more than one view. Thus, knowledge capitalists and knowledge socialists seem to be playing different games. A knowledge capitalist can in this case be seen as a knowledge fascist, as they imply that open inclusivity is weakness, and thereby resist opposition by rejecting values inherent to knowledge production observed throughout history. Knowledge capitalism is thus a bold statement of a new global knowledge order. As in other neoliberal schemas, it appears that all have access in equal circumstances, while at the same exclusion and scarcity are regarded as de facto social conditions, negating the value of openness and even knowledge production in contrast with ownership over means and ends.

A Collective Work on Collective Work

Academic research is no stranger to collective work. In 2015, a physics paper produced by two teams working at the Large Hadron Collider at Europe's particle-physics laboratory CERN was authored by 5154 contributors (Aad et al. 2015). 'Only the first nine pages in the 33-page article, published on 14 May in Physical Review Letters, describe the research itself—including references. The other 24 pages list the authors and their institutions.' (Castelvecchi 2015) This is just one of many examples that can easily be found all over natural sciences, yet in these days, we are witnessing a surge in collective approaches to knowledge making and dissemination in the humanities and the social sciences. For instance, since 2011, I have been working on a book of interviews, or conversations, about learning in the age of digital reason with people working in various fields from philosophy to the arts (Jandrić 2017). In 2016, Michael Peters founded the Editors' Collective, a NZ-based organization which explores philosophy, politics and practice of academic research and publishing, and which has by now produced numerous collectively authored articles. To push the format a bit further, in 2018, Peters and I published a dialogical book *The Digital University: A Dialogue and Manifesto* (Peters and Jandrić 2018), and in 2020, I published a (very different) dialogical book with Peter McLaren (McLaren and Jandrić 2020). When I founded *Postdigital Science and Education*[1] journal in 2018, I started producing collective articles outside of the Editors' Collective. After

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[1]See https://www.springer.com/journal/42438. Accessed 20 December 2019.

a decade of various collective experiences listed in this little navel-gazing exercise, I often ask myself: What, if anything, is really different about collective research?

Let me start with what seems to have remained the same. Collective research typically results in academic articles, chapters and books just like the one you are reading now. Our articles are still of roughly the same length; we still have lists of carefully formatted references; we still have abstracts, introductions, methodologies, conclusions; and we still give out these articles for free to publishing behemoths who then sell them for extortionate profits. We seem to have mastered one specific form of peer production—and then, we happily transferred our copyright to Springer who now sells this chapter for $29.95 or whatever its current price might be. To borrow another adage created by Michael Peters, this chapter could be described as giving just a bit more funk to the 'dirty little industrial machine' of academic publishing (Peters and Jandrić 2018: 292). So, where are collegiality and collective intelligence—and above all, where is socialism—postulated in Peters' (2019) essay 'Knowledge socialism: The rise of peer production—collegiality, collaboration, and collective intelligence' and also this book?

There is indeed a lot of collective research out there, but a lot of this research is produced for advancing capitalist modes of knowledge production and dissemination. This is hardly a surprise: capitalist academia likes a little bit of innovation here and there, for as long as it is not subversive of the system as such, and these days collective research seems to be a useful buzzword that can do wonders for people's careers. However, Peters' concept of knowledge socialism is fundamentally different. With its philosophical grounding in concepts of openness, knowledge cultures, col(labor)ation, and others (see Peters and Jandrić 2018; Peters 2019), and with its clear ideological underpinnings boldly summed up in the elusive and often misused concept of socialism, Peters' theory of knowledge socialism is deeply subversive of capitalist modes of knowledge production and dissemination. At the same time, there is no escape from the fact that Peters' practice of knowledge socialism—including this book—firmly sits in the context of knowledge capitalism. At the intersections of these fundamentally opposed theoretical and social forces, Peters develops a specific *praxis*, which (paraphrasing Holloway 2016) sits in our current capitalist social arrangements, works (to a limited extent) against these social arrangements, but primarily imagines what knowledge making and dissemination could be beyond these social arrangements.

Peters' knowledge socialism is situated in the old dialectic between being and becoming, between despair and hope, between today and tomorrow. Peters' knowledge socialism is not yet, even in this book, but it opens up opportunities for what new modes of knowledge making and dissemination could be, and it asks what kind of a future world we would like to live in. With this conclusion, I now provide some provisional answers to my earlier questions. Collective knowledge making and dissemination, per se, has nothing to do with socialism. Knowledge socialism arrives into being only through specific praxis, based on certain philosophical and ideological underpinnings, which cannot be thought of without reference to social change.

Peters' knowledge socialism is located in radically subversive praxis of collectivity sitting in and against, but looking beyond, our current reality. It does not merely imagine new ways of production and dissemination of knowledge—more importantly, it imagines a different kind of society and a different relationship between human and non-human beings. This is why Peters' knowledge socialism is different and subversive— and this is why I am proud to be a part of this collective.

The Merging Idea of Knowledge Socialism: Reflective Discourse Between the East and the West

The merging idea of knowledge socialism is an implicit attempt at developing collective and innovative intelligence/wisdom aimed at inspiring collective approaches to writing, producing and presenting contextually. The core rationale for this attempt stems from the endogenous conflict between knowledge socialism and knowledge capitalism in a globalized academic world. This challenge also triggers tremendous tensions or discords which make serious impact on the development of the academia. On top of significant theoretical contributions of Peters' work, the idea of knowledge socialism' offers a specific lens to explore the ideas and practices of academic being and production contextually. The key notion of disseminating knowledge socialism can be summarized in some core commitments such as collaboration, sharing, collegiality and peer economy. All those elements contribute to an understanding why theory and practice of 'knowledge socialism' need to be promoted in an interconnected academic world.

The merging idea of knowledge socialism develops theory and practice of collegial and collective exchange of ideas. Therefore, it can be described as an innovative praxis of knowledge work. Peer production (including, but not limited to, collective writing exercised in this article) ignites strong passion and provides its practitioners with indispensable collective power. In this article, the practice of knowledge socialism involves a series of tasks such as editing, writing and publishing; all of which are done interchangeably by authors. These major parts of producing knowledge play together in a 'knowledge chain' and collectively shape contemporary praxis of knowledge socialism. On a macro-level, Peters' theory provides a comprehensive and insightful lens for applying philosophical perspectives to understand and develop knowledge socialism through 'collegiality, collaboration and collective intelligence'.

On a micro-level, the merging idea of knowledge socialism closely relates to 'collective individualism model of learning' (Xudong and Li 2019). This model describes individualized learning styles of students in Chinese classroom culture characterized by nine symbolic objects: textbook, exercise book, pen, blackboard, screen, computer, table, chair and platform. It theorizes formal collectivism and substantive individualism through constructive learning theory, social learning theory, Mezirow's transformative learning theory and Kolb's experiential learning theory. Peters' 'knowledge socialism' focuses on philosophical perspectives to and

academic knowledge development exercises of collective and innovative intelligence/wisdom, while the 'collective individualism model of learning' concentrates on practical teacher education, innovative talent cultivation and fulfilment of 'Four Good Teachers' goal in Chinese education. It is through connecting the macro-level of Peters' philosophy of knowledge socialism, and the micro-level of the 'collective individualism model of learning', that we can try and develop a more complete understanding of theory and practice of knowledge socialism.

Conclusion

As a collective, and in conclusion, we would like to dwell briefly on the idea of knowledge as a historical practice (Peters 2019). If knowledge socialism and knowledge capitalism differ on their instrumentality, then one element of this differentiation might be their experience of time. Knowledge socialism accepts delay, that it's not 'a waste of time' (Garoian 2016: 191), in order to delay a thought. The apparent fast pace of knowledge capitalism pushes back against knowledge socialism at the point at which there is a socialist manifesto to flood the market with ideas and publications as if these will turn the tables on the capitalist agenda. This is not however to say that there is an easy measure of fast and slow. It's a relationship to time, but not one that can be qualified or quantified. The point here is to consider what it is that urges the rushing, the frantic, the anxious collaborations and networks and productions:

> The old liberal metanarratives of knowledge inherited from the Enlightenment based on high sounding knowledge ideals peeled away to reveal an economic discourse based on the calculated use of computing power, the significance of electronic networks, the efficiency and quality of knowledge, planning and progress in R&D, human capital theory, with increasing frequency in the use of these terms to describe the interface of new knowledge and technology, and a conception of technology-led science. (Peters 2019: 1)

In other words, the technological society produced a particular relationship to time that confounds not just the chance to enact the collective, but also to even recognize or imagine it. For example, Peters describes how the concept of innovation is imagined to be fleeting, driving an apparent need for constant production of apparent innovation (Peters 2019).

Each author, in building this collective work, has engaged with the problem that faced Joseph Knecht in *The Glass Bead Game* (Hess 2013). However, Knecht's memoirs of a future academic state explore for him the ruins of an academy that has been freed from the demands of the neoliberal knowledge economy. In this novel, there is no rush to play the game—it is perhaps antithetical to be concerned by the time it takes to study and enact the rules of enlightenment. Yet it is not the experience of time that becomes a problem for Knecht but rather, as explored here, the problem of hierarchy.

In *The Plague* Camus (1960) writes on time more specifically. While Knecht's prison walls are those of an elitist knowledge society, for Rieux, Tarrou, Grand

and others, the coming of the plague imprisons them in their Mediterranean city. Camus' special take on absurdity provides alternative responses for messing with the appearances and experiences of time in higher education.

> *Query:* How contrive not to waste one's time? *Answer*: By being fully aware of it all the while. *Ways in which this can be done*: By spending one's days on an uneasy chair in a dentist's waiting-room; by remaining on one's balcony all a Sunday afternoon; by listening to lectures in a language one doesn't know; by travelling by the longest and least-convenient train routes, and of course standing all the way; by queuing at the box-office of theatres and then not booking a seat. And so forth. (Camus 1960: 24–25) (italics from the original)

Knowledge Socialism, Collective Writing and Academic Labour: A Response (Michael A. Peters)

Collective Writing and the Juridical Construction of the 'Author'

I must confess to some embarrassment at seeing my name figuring so prominently in this article and I am accordingly deeply grateful that my colleagues should find the concept of knowledge socialism worthy of reflection. I am also interested in the discussion of the use of an author's name and mine in conjunction with a body of thought that tracks back to 'authors' that stand for a range of different thinkers in different traditions: I am already inserted into various relationships with theory that predate anything I have to say. I was also immediately taken with the suggestion of a history of social knowledge practices. My own contribution has been to reflect on 'knowledge economy' and to talk of 'knowledge capitalism' as an analytical description that ties knowledge to at least two forms of production by mentioning the mode of production I call 'knowledge socialism'. The simple point is that knowledge economy in the mainstream literature is seen increasingly as an aspect of digital capitalism and yet embedded within this mode of academic production is also a mode that incorporates historical features of the university from its mediaeval and modern heritage that exemplifies a different mode we could call 'socialist' in so far as it is based on the community of scholars and the collective production of knowledge. The community of scholars in each discipline constitutes also a community of inquiry where collaboration, sharing of resources, collegiality, peer review and peer production are endemic and defining features and stand in opposition to exceptional aspects to be explained in a privatized and individualized economy for profit. This tension or quasi-contradiction has become even more pronounced under neoliberalism with the growth and concentration of 'big' publishers with their links to university consortia, ranking agencies and government research funding regimes.

Authorship and the question of the name of the author are still issues in knowledge socialism because it is tied to the legal rights of the author. We might say that the modern 'author' is a juridical construction tied to the emergence of legal norms associated with the history of law and the definition of authorship in the development

of copyright and the legal conditions of publications. Both Barthes and Foucault initiated an understanding of the genesis of the 'author-function' that has spurred jurists and historians of the literature to analyse the social responsibility of the author and the professionalization of writing. Gisèle Sapiro makes it clear:

> Two juridical aspects frame the modern notion of author: legal responsibility (or liability), as defined by laws on the freedom of the press and its limits; and the author's right to earn an income from his or her work. This double legal frame determines the conditions of the writing occupation, which underwent a professional development during the nineteenth century. (Sapiro 2014)

This double frame Sapiro (2014) argues 'determines the conditions of the writing occupation, which underwent a professional development during the nineteenth century' sparking debate in the public sphere and leading to different conceptions of the literature and the social role of the author. Academic authorship can be seen to follow well-established legal norms. Its form has been largely individualistic determined by Romantic notions of the novel in the period of industrial capitalism.

The current conception is now historically and legally embedded, but there have been notable exceptions to this paradigm. I am thinking in particular of 'Nicolas Bourbaki' as the collective pseudonym of a group of French mathematicians. The surname Bourbaki was selected as a humorous gesture. It was the name of a French general who fought in the Franco-German war of 1870–71 and lost big time. The collective name was chosen by a group of French mathematicians who studied at the École Normale Supérieure and were strongly influenced by the German mathematician David Hilbert (1862–1943), a formalist who was responsible for the axiomatization of geometry. His programme in philosophy of mathematics indicated that all mathematics follows from a finite set of chosen axioms which can be proved to be a consistent system. The dedicated Website states:

> The Bourbaki group was formed in 1935. Its founding members were: Henri Cartan, Claude Chevalley, Jean Coulomb, Jean Delsarte, Jean Dieudonné, Charles Ehresmann, René de Possel, Szolem Mandelbrojt, André Weil. The Association of Collaborators of Nicolas Bourbaki was created in 1952. (Association des collaborateurs de Nicolas Bourbaki 2020) (author's translation)

The groups was responsible for writing a textbook in algebra called *Éléments de Mathématique,* the first volume of which was published in 1939 devoted to set theory. New editions of earlier chapters have been periodically released and new volumes have been added. *Algebraic Topology* was published in 2016, and the Bourbaki Seminar and the Betty B. Seminar (named after Nicolas' fictional sister) have been held annually (see Association des collaborateurs de Nicolas Bourbaki 2020). The decades 1950-1970s were the 'golden age', a period that coincided with the development of French structuralism in philosophy and the social sciences. Bourbaki was also responsible for developing a distinctive form of topography using an axiomatic approach. It is a small group of a dozen thinkers over three generations that lost and admitted new members.

Essentially, this was a structuralist account of mathematics that claimed to lay universalist foundations, and the name Bourbaki was a clever embodiment of the same philosophy that emphasized collective writing, collective authorship and a painstaking line-by-line agreement. Together and between them over the course of a couple of decades, they remoulded the shape of mathematics in the twentieth century. Some critics claimed that Bourbaki's encyclopaedias were misused to reform school education (Atiyah 2007: 1151).[2] Part of the reason I chose this example is because the Bourbaki view not only represents a group of mathematicians that have worked together under one pseudonym over three generations but also was influential in education through the work of Piaget. I am aware that the present group of authors include three scholars working in the field of early childhood education.

Jean Piaget adopted the Bourbaki view of mathematical structures ('mother structures') as the basis for his own view of stages of children's thinking. In his book *Structuralism,* Piaget (1970) devotes a chapter to Bourbaki and claims that Bourbaki's 'mother structures' are natural and correspond to stages of children's thinking. It became the basis also for his of genetic epistemology and structuralist interpretation of developmental psychology, focused on the concept of truth rather than meaning, as with other applications in philosophy and the social sciences. I mention Piaget's adaptation in some detail because his conception of the child and the psychological development of cognition dominate the late twentieth-century landscape in education, becoming perhaps the most influential paradigm in learning theory yet those who taught courses on Piaget rarely if ever made connections to Bourbaki or to French structuralism (Marshall and Peters 2005).

Piaget (1970) locates the problem of structures in terms of characteristics of wholeness, transformations and self-regulation. In Chap. 2, he turns to 'Mathematical and Logical Structures' discussing in turn 'Groups', 'Parent Structures' and 'Logical Structures' as well as the 'Limits of formalization'. In Chap. 3, he refers to 'Physical and Biological Structures' before turning to 'Psychological Structures' in Chap. 4 to discuss Gestalt and the beginnings of structuralism in psychology and the genesis of intelligence. In Chaps. 5 and 6, Piaget writes on 'Linguistic Structuralism' and 'Structuralist Analysis in the Social Science' mentioning Claude Levi-Strauss. In the final chapter 'Structuralism and Philosophy', he mentions Michel Foucault's 'structuralism without structures' (Peters 1996). I'm more inclined to accept and work with Wittgenstein's concept of language-game (*Sprachspiel*) that highlights the social nature of meaning and the ways in which language and agency are embedded in activities or social practices although I also think there are grounds for an interpretation that marries elements of Wittgenstein and Foucault, both of whom rejected formalism. Wittgenstein in philosophy of mathematics and language rejected logicism and the formalism of Frege's predicate calculus and Foucault developed a distinctive historical epistemology, preferring Nietzsche's genealogy to the model of structuralist

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[2]See the photographs at https://news.cnrs.fr/articles/bourbaki-and-the-foundations-of-modern-mathematics. Accessed 20 December 2019.

linguistics adopted and popularized in France by Lacan, Levi-Strauss, Althusser and Barthes. Both emphasize pragmatic and situational accounts that depended on social practices. Althusser's structuralist reading of Marx emphasized that institutions of the state in a capitalist mode of production function to reproduce the logic of capital in the long term. Foucault adopted Althusser's anti-humanism (and also anti-alienation of the early humanist Marx) but remained opposed to the concept of ideology, tending to focus on the production of subjects by institutions and social practices.

Political Economy of Academic Labour in the Age of Digital Reason

I'm beholden to my close colleagues who have done me the honour of responding to the concept of knowledge socialism and also embarked on a series of books, journals, papers and conferences to actualize the shared practices of a Thought Collective to demonstrate the reality that knowledge socialism is rooted in social relations and social practices—in sharing and collaboration, in collective intelligence, in collegiality and in knowledge practices that still exist even though the structure and processes of the neoliberal university has corroded these very conditions. This almost now-banal thought, as the Thought Collective in their reflective piece on 'knowledge socialism' point out, is open to interpretation and can be understood in many different ways.

For me, Marx's concept of socialism is still an inspiration in its simplicity. Marx provides an alternative of form of production that encourages us to work together collectively to overcome the 'alienation' from our work, our fellow human beings, ourselves and nature, so that we can return to ourselves and grasp the nature of the world through our own powers.[3] Marx, as my colleagues remind us, provides a critical link to conceptualize the production of knowledge in relation to the mode of production revealing the nature of academic relations that constitute the university. These relations are not genuinely social in that they have become hierarchized around concepts of academic labour that negate or work to reduce concepts of freedom and equality both of which are traditionally regarded as necessary for academic work.

We can examine three concepts of labour in terms of tradition of Marxist political economy: (i) industrial labour; (ii) 'immaterial' labour (digital economy); (iii) academic labour and its future in 'cognitive capitalism'. For Marx, work is the fundamental and central activity in human life and, potentially at least, a fulfilling and liberating activity. Although this humanist metaphysics is implicit throughout Marx's work, there is little explicit explanation or defence of it. The fullest treatment is in the account of 'estranged labour' based on an understanding of the self and self-realization through material labour (and alienated labour). I'm not sure whether

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[3]See https://www.marxists.org/archive/fromm/works/1961/man/ch06.htm. Accessed 20 December 2019. I have removed Fromm's use of 'man' and male pronouns. To me alienation is still a useful concept.

this ontology can be defended today in face of automation and the disappearance of work and after Althusser and Foucault it is difficult to rescue 'alienation'. In the radical critique of political economy, Marx could agree with Hegel that humanity had created itself but Marx's discovery was that it was not philosophy (or 'spirit') that created us, but labour in the material sense. In Foucauldian terms, we can accept both historical and materialist dimensions but might work to lose the ontological dimension or at least to reconstruct it in terms of the production of academic subjectivities. The question of how material labour of industrial capitalism translates into the 'immaterial' processes of abstract labour in the digital economy is still a point of contrast engendering much debate.

Marx inherited the labour theory of value from the classical school (including Adam Smith, Ricardo) which also utilized humanist categories. For the classical school, labour is essentially a factor of production along with capital and land but for Marx, labour is value, an objective social and historical category. The shift to postindustrial capitalism involves a combination of new revolutionary technologies including robotization, AI, 5G that is contributing to the disappearance of industrial labour and leading to questions about technological unemployment (Peters et al. 2019). One of the critical questions is whether these processes also apply to academic or intellectual labour and in what ways.

The notion of 'immaterial labour' is a concept derived from Lazzarato (1996) to describe how value is produced from affective and cognitive activities commodified in capitalist economies, including 'free labour' in online platforms that represents the nature of labour in late capitalist societies. As Terranova (2000: 1) explains: 'The NetSlaves is not simply a typical form of labour on the Internet; they also embody a complex relation to labour that is widespread in late capitalist societies.' I prefer to use the term 'digital labour' as a term for emergent forms of labour in post-Fordist economies which produce symbolic value through the use of new digital technologies and take various forms on digital platforms through the creation of content, often based on highly personal data, that constitutes social media and provides the basis for illicit data hoovering, capture and manipulation (Peters and Bulut 2011). One of the critical questions of higher education and academic labour in cognitive capitalism is still simply to inquire who benefits from the work that academics spend on the platforms of Big Tech.

In the last few decades under neoliberalism and managerialism, academic labour has been downgraded to forms of flexible and precarious labour where academics engaged in research and teaching typically are employed on some form of insecure, non-permanent contract. In British and Australian universities, *over half* of academic labour force exists on short-term contracts that elapse within nine months, while others are paid by the hour for class work. The Guardian has revealed that university teaching in the UK 'is now dominated by zero-hours contracts, temp agencies and other forms of precarious work' (Charakrabortty and Weale 2016). Universities, increasingly dominated by new intelligent system technologies (IST) including AI, deep learning, robotics and increasingly quantum computing, are developing extensive contingent faculty employment schemes, with extensive subcontracting and 'contracting out' leading to downwards salary pressure and erosion of job security.

Information technology centralizes both staff and student administration, homogenizing, standardizing and enforcing compliance of the management of university teaching, while often also putting all content online for flexible delivery systems. Meanwhile, there have been huge increases in data-intensive research that uses algorithmic search and analysis engines, as well as augmented intelligence systems to carry out research. Thus, the two principal functions of knowledge—research and teaching—are being radically transformed into coded content that is divorced from the context of use and easily deliverable by cheap academic labour or created and distributed through deep learning forms of research.

By contrast to human capital and the digital academic economy, *co(labor)ation* is the essence of 'creative labour' ('we-think', 'we-learn', 'we-write'). Creative labour is the basis for collective intelligence (also collective action and collective responsibility). On this model, Gibbons, Tesar, Arndt, Kupferman, Badenhorst, Jackson and Jandrić demonstrate collective writing as an expression of a knowledge culture based on a workable methodology and philosophy of collective intelligence and peer production which is one of the natural communities for knowledge socialism.

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Andrew Gibbons is an early childhood teacher and teacher educator at the School of Education, Auckland University of Technology. His research engages with early childhood curriculum, the philosophy of early childhood education, the philosophy of technology, and with early childhood teacher wellbeing. His work particularly focuses on the possibilities and limitations of early childhood education policy.

Marek Tesar is an Associate Professor and Associate Dean International at the University of Auckland, New Zealand. His research is focused on philosophical methods, childhood studies and early childhood education, with expertise in the philosophy of education and childhood. His latest research is concerned with the construction of childhoods, notions of place/space, and methodological and philosophical thinking around ontologies and the ethics of researching these notions, in China, New Zealand and Australia.

Sonja Arndt is a lecturer at the Melbourne Graduate School of Education at the University of Melbourne. Her teaching and research intersect the philosophy of education and the subject, the study of childhoods and early childhood education. With a particular interest in the study of cultural Otherness, strangeness and identity formation, Sonja's recent work explores bridging post-structural and posthuman conceptions and relationships of the self and other/s as a critical response to contemporary ecological and humanitarian crises. Sonja's commitment to elevating philosophical thought and ethics in education is focused on marginalized groups and their everyday and wider realities.

David W. Kupferman is currently writing about neoliberalism and educational futures. Occasionally, he also writes about science fiction and childhood and has recently edited the book *Childhood, Science Fiction, and Pedagogy: Children Ex Machina* along with Andrew Gibbons. He serves as an associate editor at *Policy Futures in Education* and is an assistant professor of educational foundations at Minnesota State University Moorhead.

Daniel Badenhorst recently obtained a Masters degree from the University of Auckland. His areas of interest are continental philosophy, political economy and the decolonial critique of these traditions. These differing traditions each make a competing call on Daniel's thought. As a result, his work often presents itself as an exercise in tightrope walking as he finds himself strung out between two incompatible poles, between which lies a gaping chasm. Recently, Daniel's work has been focused on finding a way to walk this fine line, to balance on the rope, if there is one, between the philosophies of Hegel and Fanon.

Liz Jackson is Associate Professor in philosopher of education and Director of the Comparative Education Research Centre at the University of Hong Kong. She currently serves as President of the Philosophy of Education Society of Australasia. Jackson's single-authored books are *Muslims and Islam In US Education: Reconsidering Multiculturalism* and *Questioning Allegiance: Resituating Civic Education.* She is finalizing her third book which will be published with Cambridge University Press and is entitled *Against Virtue: The Politics of Educating Emotions.* She has also recently co-edited the books *From 'Aggressive Masculinity' to 'Rape Culture': An Educational Philosophy and Theory Reader* and *Feminist Theory in Diverse Productive Practices* (both with Michael A. Peters).

Petar Jandrić is Professor at the Zagreb University of Applied Sciences, Croatia and Visiting Professor at University of Wolverhampton, Wolverhampton, UK. His previous academic affiliations include Croatian Academic and Research Network, National e-Science Centre at the University of Edinburgh, Glasgow School of Art, and Cass School of Education at the University of East London. Petar's background is in physics, education and information science, and his research interests are situated at the post-disciplinary intersections between technologies, pedagogies and the society, and research methodologies of his choice are inter-, trans-, and anti-disciplinarity. He is Editor-in-Chief of *Postdigital Science and Education* journal and book series. Personal Website: http://petarjandric.com/.

Zhu Xudong is Professor and General Secretary of Teacher Education Experts Committee of Ministry of Education (MOE), Dean of Faculty of Education at Beijing Normal University, Director of the Centre for Teacher Education Research (CTER), Vice-General Secretary and Executive Director of the National Teacher Education Society, one of the Social Sciences Hundred Engineering People in the New Century in Beijing, participant in the first batch of 'A Group of Four' Talents in Beijing, and a senior visiting scholar of Fulbright Program at University of Maryland. Prof. Zhu's areas of research include Teacher Education, Comparative Education, Foreign Education History and others. He has published more than ten books, eighty papers and has edited four series.

Michael A. Peters is Distinguished Professor of Education at Beijing Normal University Faculty of Education PRC, and Emeritus Professor at the University of Illinois at Urbana–Champaign. He is the executive editor of *Educational Philosophy and Theory* and founding editor of ten international journals. His interests are in philosophy and education and he has written over one hundred and twenty books, including several books on Wittgenstein. He was made an Honorary Fellow of the Royal Society of NZ in 2010 and awarded honorary doctorates by State University of New York (SUNY) in 2012 and University of Aalborg in 2015. His recently published book is *Wittgenstein, Antifoundationalism, Technoscience and Philosophy of Education* (2020).