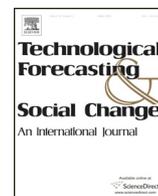




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## Technological Forecasting &amp; Social Change



## Global Commons in the Global Brain

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## ABSTRACT

The next decade (present to ~2020–2025) could be characterized by large-scale labour disruption and further acceleration of income and wealth inequality due to the widespread introduction of general-purpose robotics, machine-learning software/artificial intelligence (AI) and their various interconnections within the emerging infrastructure of the 'Internet of Things' (IoT). In this paper I argue that such technological changes and their socio-economic consequences signal the emergence of a global metasystem (i.e. control organization beyond markets and nation-states) and may require a qualitatively new level of political organization to guide a process of self-organization. Consequently, this paper proposes and attempts to develop a conceptual framework with the potential to aid an international political transition towards a 'post-capitalist' 'post-nation state' global world. This conceptual framework is grounded within sociotechnological theory of the 'Global Brain' (GB), which describes a potential future planetary organizational structure founded on distributed and open-ended intelligence; and the socioeconomic theory of the 'Commons', which is a paradigm describing distributed modes of organization founded upon principles of democratic management and open access. In the integration of GB theory and Commons theory this paper ultimately argues that an appropriate international response to the emerging technological revolution should include the creation of networks with both automated and collaborative components that function on 'Global Commons' (GC) logic (i.e. beyond both state and market logic).

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### 1. Technological revolution/disruption is near (but what about our response?)

A diversity of novel technologies within the domains of robotics, machine learning/artificial intelligence, nanotechnology, biotechnology are emerging. Moreover, these technologies and their interconnection with cloud computing, big data, mobile Internet, and the Internet of Things (IoT) are increasingly enabling the formation of a global infrastructure founded upon automated smart systems and distributed social networks. These automated smart systems and distributed social networks can both self-organize from local 'bottom-up' interactions (often operating on peer-to-peer (P2P) logic), thus reducing or eliminating the necessity of central hierarchical 'top-down' control structure. Furthermore, these systems and networks have the potential to continue transforming various sectors of economic, social, and political life, including the nature of homes, factories, farms, transportation grids, hospitals, education, and even the total infrastructure of cities and countries. Thus, the purpose of this paper is to usefully engage a debate on the social, economic, and political implications of these technological changes, and specifically to engage a debate on the way these technologies will be used in relation to power and centralized hierarchy characteristic of historical organizations like nation-states and corporations.

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From the purely technological perspective, the totality of these trends and developments signals the beginnings of a (so-called) 'Fourth Industrial Revolution'. This technological revolution is distinct in its speed (exponential) and scope (global) when compared to previous revolutionary waves of industrial production (which were linear and local) (WEF, 2016). Of course, the consequences of an 'exponential' and 'global' technological revolution are almost or even totally unpredictable in the sense that the structure of human life and civilization will undergo changes of a unique qualitative nature. Such a qualitative change, although without real parallel, may be considered comparable only to historical 'metasystem transitions' (i.e. emergence of higher control organization), like the transitions from (pre-historical) foraging to (pre-modern) agricultural societies, or from (pre-modern) agricultural to (modern) industrial societies (Last, 2015a,b). Consequently, when this technological revolution is considered from social, economic, and political perspectives, humanity is presented with the immanent emergence of a totally other world, and thus a contemporary situation with far more questions than answers. What is to be done?

First, we can start with the primary features of the technological shift in relation to social, economic, and political processes, which is (likely) to include the following:

- A) The transition will blur the lines between the 'physical' (actual-existential) and the 'digital' (virtual) worlds challenging the logical and conceptual foundations of primarily or purely physical

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institutions that are constrained by geography, maintenance costs, and centralized intelligence structures; but also primarily or purely digital networks that are often isolated or disconnected from directly impacting the physical world,

- B) will lead to the disruption of fundamental socioeconomic notions and organizing principles of *location, production, labour, and property* as many organizational forms will communicate and coordinate multi-locally/globally and include large-scale automated production components with advanced materials,
- C) will change the human relation to public (state) and private (market) spheres of socioeconomic organization and coordination as the state constructs rigid local boundaries based on control of property and labour, whereas the market operates purely on profit-driven monetary logic without consideration for the complex and multi-dimensional spheres of human value unrelated to profit or commodity exchange,
- D) will require an open, active, pluralistic, and meta-reflective dialogue between a wide diversity of actors (in all spheres of human life) about the meaning and direction of this emerging world beyond the dominant state and capitalist forms (state-capital nexus), in the hopes of finding a new level of (commons) coherence and integration, and most probably a new type of social contract (focused on a new relation between the individual's rights within the totality of the sociopolitical sphere)

Thus, the challenges presented by this emerging technological revolution are immense and in many ways overwhelming in the dimension of opportunities and problems (which both present limitless horizons from our contemporary perspective). Specifically, these technological changes offer the potential opportunity of historically unparalleled levels of productivity, abundance, and liberation – a true revolution if social and economic power can assume a distributed and open form. However, these technologies also offer the potential problem of historically unparalleled levels of labour instability, inequality, and control – a true disruption if social and economic power remains in a highly centralized and closed form. These challenges require immediate mediation as the aforementioned revolutionary/disruptive technologies and the cumulative effects of their self-organized interconnection in smart systems/distributed networks are developing quickly and being implemented within an unregulated international environment dominated by private corporate activity (international environment as structured by 'neoliberal institutions').

An international order structured by neoliberal institutions is problematic in the context of the emerging technological revolution because the systemic dynamics it engenders exhibit little-to-no common regard for social and environmental spheres, and thus no practical functional ability to manage the totality of the social and environmental spheres. Consequently, although an international neoliberal order leads to high levels of productivity and abundance, it does so at the cost of higher levels of labour instability, socioeconomic inequality, and environmental degradation. In the past it could be argued (and indeed was argued successfully in many regions) that the cost of labour instability, socioeconomic inequality, and environmental degradation was worth the price of higher levels of productivity and abundance. However, given the emerging nature of our technological horizons (of the capability to produce ecologically sustainable abundance with reduced need for human labour) it seems only logical to fundamentally re-assess the nature of civilization and the common dimension of the individuals place within it (relation between the part and the whole, the particular and the universal).

Thus, ultimately, the consequences of this emerging (exponential-global) technological revolution for human civilization is that a new understanding of geopolitics (large-scale political collectives) will be required to navigate towards a new socioeconomic world (of opportunities and problems), and that new geopolitics will require new

conceptual foundations and organizational mechanisms. In order to properly situate this argument in the contemporary literature I would propose that the geopolitical problem of constructing new large-scale political collectives is the essence of the challenge presented in 'Part Four' of Thomas Piketty's *Capital in the Twenty-First Century* (2014), which is essentially a section focused on speculative geopolitical futures. The essence of this challenge is as follows:

- A) global capital is out of control (private sphere),
- B) nation-states cannot control it (public sphere),
- C) contemporary international organizations cannot control it (pseudo-commons sphere), and,
- D) if we cannot think a solution (an authentically new qualitative form of large-scale political collective), then labour instability, income/wealth inequality, and also economic-ecological instability will be seriously and potentially irreversibly exacerbated.

Piketty's now well-known 'utopian solution' would be to erect some idealized form of 'Global State' capable of regulating global markets with a progressive global tax (2014, p. 515):

"To regulate the globalized patrimonial capitalism of the twenty-first century, rethinking the twentieth century fiscal and social model and adapting it to today's world will not be enough. To be sure, appropriate updating of the last century's social-democratic and fiscal-liberal program is essential, which focused on two fundamental institutions that were invented in the twentieth century and must continue to play a central role in the future: the social state and the progressive income tax. But if democracy is to regain control over the globalized financial capitalism of this century, it must also invent new tools, adapted to today's challenges. The ideal tool would be a progressive global tax on capital, coupled with a very high level of international financial transparency. Such a tax would provide a way to avoid an endless inegalitarian spiral and to control the worrisome dynamics of global capital concentration. Whatever tools and regulations are actually decided on need to be measured against this ideal."

Consequently, Piketty's ultimate solution for '*Capitalism in the 21st Century*' is essentially a form of '*Global Keynesianism in the 21st Century*', where we re-invent the nature of the social state and the progressive income tax, but this time instead of just reinventing these dynamics at the multi-local nation-state level, we reinvent these same dynamics for the higher global whole. Although Piketty admits that such an approach is 'utopian' in the sense of being an 'ideal' projection and thus unrealistic in the 'material' domain, he also suggests that, as the end of the above quote suggests, all attempts to solve the problem of global capitalism should be 'measured against this ideal' of what essentially amounts to a 'Global State'. The philosophical logic here is the relation between 'materialism' and 'idealism', where the 'ideal' (for Piketty) functions as an attractor state or pole for grounding materialist political construction projects. The economic logic here is that, in the same way that the inhumane consequences of free market capitalism (labour instability, socioeconomic inequality, etc.) were reduced by nation-state interventionism in the second half of the 20th century ('New Deal'), this same dynamic can be erected for global civilization in the 21st century, and ultimately save both capitalism and the state form itself, albeit at a new global level ('New New Deal').

From the perspective of the challenges posed by the emerging technological revolution (i.e. of an exponentially emerging self-organized global world founded on automated smart systems and distributed networks), these problems identified by Piketty (i.e. of global capital and its global control problem) simply accelerate the necessity of large-scale political action (~2020–2025) in order to prevent the eruption of fundamental antagonisms which are now clearly stressing the structural foundations of the world as it is, especially in relation to class struggle. In other words '*things cannot go on the way they are*': there is a real

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