

It Could Be Otherwise: Social Progress, Technology and the Social Sciences

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The idea of social progress and the origins of modern science and technology are inextricably intertwined. Indeed, it was this idea that kept the entire enterprise of modern science and technology going. Reinforced by the actual scientific and technological practices, this belief became the open-ended, future-oriented project that was shared among a minority of (then so-called) natural philosophers, artisans and craftsmen. It included notaries, apothecaries, and other, largely urban dignitaries. Material support and patronage came from rulers and governments who became convinced that they had something to gain. In return, they had to guarantee a (relative) degree of autonomy to incipient science. This formed the basis on which a systematic exploration of the natural world would yield tangible and, eventually, enormous material benefits.

The Baconian programme of modern science, with its emphasis on practical utility, evolved side-by-side with the sense of awe and wonder that science and technology continued to elicit. The belief in scientific and technological progress, central to the Enlightenment, encompassed the belief that this would also lead to moral

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progress. In the *Encyclopédie*, D'Alembert offered a historical account of progress laid out in the plural—*les progrès*—of knowledge and human understanding. The idea of *Aufklärung* soon reached a much broader scope through Kant's famous definition as the freedom to make public use of one's reason with the goal of liberating mankind from its self-imposed immaturity. Human betterment would be achievable through the use of reason. The core idea of the ability of "Rational Man" (yes, mainly men) to solve problems through reasoned discussion persisted far into the nineteenth century. It was at the core of liberalism and the establishment of nation states as imagined communities of rational citizens. It became embedded in international organizations, many of which were founded during the second half of the nineteenth century, and led to thinking that wars can be overcome through rational decision making. The big shock came with World War I, which dealt the final blow to the idea of moral progress.



Figure 1. Kant defined *Aufklärung*, or enlightenment, as the freedom to make public use of one's reason with the goal of liberating mankind from its self-imposed immaturity, an idea that became the core of liberalism. (Source: [cc] Tim Lawrenz on Flickr.)

Despite this shock, the stunning technological progress achieved in the nineteenth century did not lead to moral judgment. Technology was seen to be a neutral, irresistible force, the harbinger of social progress. The construction and handling of this force that had tamed nature and built new communication, energy, transport, food, and other technological systems to serve society and the Nation State should stay in the hands of experts. This may explain why this concept of technology

underpinned all major ideologies of the twentieth century, from Marxism to fascism and liberalism, and why technocracy could attach itself to all three, leading to a shared legacy which shaped in a deep way the development of nation states, international organizations, and their social progress agenda.

In a technocratic framework, the production of scientific knowledge and the making of technology are disconnected from the negative impacts they might generate. The latter were left to be dealt with by the social sciences. The technosciences are to be unleashed and nourished, like the goose whose golden eggs are highly coveted, while it is left to the State (aided by the social sciences) to manage undesirable impact and to mediate unwanted consequences. Thus, progress became predominantly equated with technological progress—highly visible, tangible, and accelerating. Technological progress would chart the route towards modernization, and social progress would follow in its wake.

The Industrial Revolution's negative fallout, health issues, pollution, inequality and poverty persisted in the shadow of technological progress as an irritating reminder that neither science nor technological fixes can solve all social problems, but the overall discussion was no longer about whether or which specific technological options should be promoted (as was still the case with the Luddites who opposed de-skilling innovation, but certainly not all innovation). The concern now was for how technology would be used for the purposes of modernization. More technology simply meant "more progress of society." Technology became the "measure of men." The process of colonialization assured that this powerful narrative circulated across the globe and colonizers working with local elites used the colonies as test beds and laboratories for experimenting with technology and the social progress it would bring.

Meanwhile, the social sciences were engaged in measuring and comparing social progress, working in alignment with the natural sciences and the State. From what was termed "social physics" by Adolphe Quetelet, to statistics as a well-equipped arm of the modern bureaucratic State, the information and knowledge thus gained was predominantly collected in the service of the State administration, and used to manage and control the population. Beginning with regular measurements of the height of young men for army recruitment, a host of other numerical indicators followed to keep track of

almost everything the State was interested in and capable of measuring. Statistics continued to measure the wealth of nations and to quantify people.



Figure 2. Census publicity photo, Harry L. Hopkins Collection. (Source: [cc] FDR Presidential Library on Flickr.)

Behind these numbers and advances in quantification techniques, serious social scientific arguments began to lay the theoretical and methodological foundations for social science disciplines. Economics, originally conceived as political economy, became the dominant social science, but was by no means the only lens through which social progress was examined. Societally desirable goals and yardsticks were articulated by reformers, political activists, social scientists, engineers, and social movements. Other branches of the social sciences, especially sociology and political science, became engaged in describing, measuring, and analyzing to find out

empirically how the industrial working classes were living and working, as they were crowded into rapidly growing, dense urban conglomerates.

It was amid the social turmoil caused by industrialization that the shaping of social sciences disciplines took place, fuelled by the fear of the bourgeoisie that the underlying conditions could induce massive and violent uprisings. Eventually, and facilitated by a number of truly remarkable social innovations, such as a comprehensive social insurance system, what was widely perceived and experienced as social progress took form: the historical rise of the Welfare State.

The assumption embedded in the belief in social progress as it developed over the nineteenth and twentieth centuries was that the advances of science and technology inevitably came with negative fallouts, such as new safety issues, unemployment, pollution, and health risks. They need to be mitigated, but this is not primarily the responsibility of science and technology. A co-concurrent assumption was that, while there will be losers and winners, in the end the overall balance will be positive and everyone will benefit. Joseph Schumpeter famously defined innovation as “creative destruction”, and rightly saw innovation as a double-edged sword. For him, the creative element outweighed the destructive one. However, neither he nor his fellow economists went further to ask “who” will end up on the destructed side or which destructions are deferred to other parts of the world? We are now entering a period in world history where some are asking whether the destructive elements of technical change have begun to overshoot the constructive ones, which raises the question whether this is still a useful, albeit fictional, narrative.

There has been no lack of effort, at the national and international level, to employ concepts and instruments with the aims of mobilizing collective action to produce better outcomes for the huge variety of these present-day challenges. One of the most ambitious and visible of such efforts are the 17 Sustainable Development Goals (SDGs), agreed upon by the United Nations in 2015. These goals are designed to tackle climate change, loss of biodiversity, nuclear disaster, and deep inequality. These challenges, if not effectively countered, carry the danger of massive and irreversible destruction, revolt, even war. The SDGs could be perceived as the manifestation of the same technocratic idea of innovation and its relationship to social progress. But, while

they cannot overturn the current governance model, which continues to rely mainly on the further pursuit of economic growth—through unregulated markets or state interventions—there is space for many local, bottom-up initiatives. Moreover, the SDGs are filled with—dare we say enlightened?—rays of hope. Implicitly, they contain an invitation for the social sciences to engage anew, this time at a global level as well as national, regional, and local, with how the necessary pathways to sustainable development can be mapped out.



Figure 3. Are the social sciences ready to define their role in response to the challenges captured by the Sustainable Development Goals? (Source: <http://sustainabledevelopment.un.org>.)

Are the social sciences ready to define their role in response to the challenges captured by the SDGs? Historically, the social sciences grew up in Europe in the shadow of the nineteenth-century Nation State. Although the natural sciences also enjoyed a close relationship with the State, especially through their military-industrial connections, the dependence of the social sciences upon the State has always been much stronger, mainly due to the kind of problems they study. However, social scientists also have often engaged with civil society, social actors, and social movements. The resulting double, and often contradictory, allegiance produced fertile ground for contestation. It continues to foster critical analysis. To this day, taking a critical stand based on tacitly assumed or explicitly expressed values and norms is part of the identity and self-image of the social sciences.

If the social sciences are, once again, to become more engaged with enabling social progress, they must return to a more engaged relationship with the current dynamics active in science, technology and innovation. Closer working relationships with the natural sciences and engineering disciplines are needed if they want to convince these colleagues of some key issues regarding social progress: that it cannot be disentangled from technological progress: that it is built into the choices made for certain technological options, and that questions about the potential impact and consequences of a wide and diverse range of possibilities must be integrated early on in the design process in a participatory way, allowing citizens, people, and the organizations impacted by the technological developments to come in and have a voice.

It is in this area that the fields of Science and Technologies Studies (STS) and History of Technology (HoT) have made their greatest contributions so far: making visible the inextricable links between the social and the technical as well as, more recently, nature. As a consequence, STS and HoT colleagues often call for a democratization of science and technology and new ways of relating democracy to technocracy. However, to succeed, STS and HoT will have to address issues of social progress head on. This entails greater reflexivity and engagement in constructing a new world, using the tools STS and HoT have developed, but moving beyond a deconstructivist bend.

One of the main—and decidedly normative—tasks of the social sciences is, as it has ever been, to open up towards the realm of possibilities: to show in scientifically plausible ways that *it could be otherwise*. This is a task that goes beyond the technocratic policy options that experts prepare for policymakers to choose from. It originates from tapping into one's own creative imagination and into collective sociotechnical imaginaries. It comes from doing research using scientific methods and building models, while the assumptions on which they are based are critically reflected. It draws from many sources that the social sciences have creatively used in the past and which they continue to interrogate, adapt, and expand.

Who governs social progress?

Another significant question concerns the governance of social progress. The altered relationship between state and market, and the massive but ambivalent impact new technologies have, and will have, on society, force us to ask questions about the most appropriate kind of governance. Many institutions still operating today have been designed previously to confront the dominant problems of the time, and to perform different functions. Their adaptation is slow and there is a lack of tested knowledge of how to design new institutions more equipped to resonate with problems related to the intricate interconnections between the social, political, and technological. Governance, however, cannot simply be ordered from the shelf. The current situation calls for imaginative designs and experimentation with novel forms of governance.

In the search for the right kind of governance and giving citizens a chance not only to voice their grievances but to become actively involved, it is worth rereading Albert O. Hirschman's magistral *Exit, Voice, Loyalty*. Recently, we have seen unprecedented waves of a kind of "Super Exit." It is present not only in Brexit; the exit option is manifest in many places, far beyond deciding not to vote. It manifests itself in the frenetic and chaotic desire to escape. It is a flight from contemporary reality towards an undefined, imagined nowhere, embedded in nostalgia for a past that never was and seeking certainties that do not exist. It can take on more sinister and violent forms when it mixes with political extremism, religious fundamentalism, and resurgent nationalisms. Exit is an option, but not a satisfactory one. To open up towards the realm of the possible, the social sciences must stimulate public debate, making room for multiple perspectives and allowing for contestation. What is needed is nothing less than to redefine "Voice" in ways that can strongly resonate with and within complex policy landscapes. The ultimate goal, however, will be to re-articulate what Hirschman meant by "Loyalty" as the basis for communal identities, solidarity, and action. It is no longer sufficient to express loyalty to a political party, a social group, or the Nation State. This kind of loyalty has been eroded through processes of individualization, marketization, and globalization, reinforced through the polarizing effects of social media. What can it be replaced with? Loyalty—to whom and to what? This will be an important question for the future and will shape whatever social progress is in the making.



Figure 4. Exit is an option, but not a satisfactory one. The front page of the UK's *Daily Telegraph*, Friday, June 26, 2016. (Source: [cc] Christopher Michel on Flickr.)

In the nineteenth century, the overriding question for the social sciences was about social order: how is order possible at all, when facing the social turmoil that followed the Industrial Revolution and the political upheavals that eventually gave birth to liberal democracies? In the twenty-first century, any social order must come to terms with globalization and its discontents, with the major ongoing geopolitical shifts and the grappling efforts to avert a further depletion of natural resources for a still-growing world population and their rising aspirations. It is intrinsically intertwined with the amazing advances achieved by the technosciences that offer vast possibilities outnumbering what can be realized. The challenge for the social sciences consists in imagining, conceptualizing, and designing feasible and effective processes of selection and social

shaping that are more inclusive and driven by a commitment to social justice for all. One of the challenges of the twenty-first century for the social sciences will be to redefine *Exit, Voice, Loyalty* within a space of possibilities firmly anchored in the normative belief that *it can be otherwise*.

Suggested Readings

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About “Rethinking Society” on *Technology’s Stories*

This article is one of a series of contributions drawn from or inspired by the International Panel on Social Progress. The IPSP is a global academic initiative of more than 300 scholars from all social sciences and the humanities who have contributed to *Rethinking*

Society for the 21st Century (<https://www.ipsp.org/>), a report on the prospects for social progress today. This special collection for *Technology's Stories* marks the publication of the report and offers important insights from a cross-cutting IPSP theme that sought to examine the role of science and technology, as it contributes—or not—to social progress.

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