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Issues and opinions

Theorizing sustainability in a post-Concorde world

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ABSTRACT

Before its retirement, Concorde was a powerful symbol of technological optimism. As such, and much like the now dismantled US manned space programme, the spirit of Concorde stood in stark contrast to the prevailing pessimism about the human enterprise. Instead of an accelerating modernity and rapid space colonization (as commonly envisaged fifty years ago) we have witnessed a fading modernity with geriatric nuclear reactors, ageing infrastructure and paralyzing public austerity. Using the symbol of Concorde, this article challenges common presumptions about the relationship between modernity and long-term sustainability, arguing that the existing literature on sustainability has underestimated the risks of maintaining an ambivalent stance towards the modern project. More specifically, the article considers the risk that humanity will fall short of developing the technology necessary to break free of its planetary entrapment yet not be able to halt the rate of environmental destruction to a degree that would ensure survival here on Earth.

1. Introduction

In the not so distant past, the future was a place of dreams, a realm of unfinished aspirations, a space where we could put trust in our ability to improve present circumstances [61]. Closely tied to this view of the future was a belief in the rationalist-scientific enterprise of modernity, the belief that we, in the words of Francis Bacon, would learn about the causes of nature and through this knowledge gradually enlarge "the bounds of human empire" [5]:210). Looking at the world today, there is little doubt that we have expanded that empire far beyond the scope of any pre-modern imagination and that the rise in instrumental capacity has brought about unprecedented levels of affluence and abundance. Yet, as anthropogenic forces have become the dominating drivers of change at the planetary level [18], we have encountered also the other and darker side of modernity: ecological destruction, omnicidal weapons, and an irreversibility which seems to demand more in terms of responsibility than what we may be capable of as a species.

Already from the beginning, the ideas of the Enlightenment were at risk of perversion. Methodological naturalism could easily turn into scientism, the belief in conditional progress could turn into teleology, and the primacy of critical reflection could turn into scepticism. Despite this, the thinkers of the Enlightenment believed in the faculties of the individual, the value of dissent, and the need for public debate [15]. Yet, given how disoriented humanity has become through its initial encounter with modernity, it is not surprising that many people have lost their hope in the promise of the Enlightenment. While it may be possible to point to certain formative events such as the Holocaust or the 1986 Chernobyl disaster, it seems more appropriate to talk about a gradual loss of determination, a thinning out rather than a sharp break, and a post-modern fragmentation of all certainties rather than a conclusive rejection of modernity as such. What is striking is that none of this has stopped the core processes of modernity from continuing unaltered, be it rationalization, urbanization or, most obviously, economic globalization.

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What has been lost is rather the belief that these processes form part of human progress, and that we can employ them in a conscious democratic manner to advance civilization.

This article makes use of what used to be a particularly potent symbol of technological optimism, the Aérospatiale-BAC "Concorde", to illustrate this development. It is a symbol which, after the retirement of Concorde in 2003, took on a paradoxical layer of meaning as a harbinger of a slower and greying world. The retirement of a means of transportation which for decades had travelled at twice the speed of its conventional alternatives echoed a world in which geriatric nuclear reactors, ageing infrastructure, and worsening environmental problems have all become signs of a fading modernity. The aim of this article is to provide a new theoretical language for this process and to challenge existing presumptions about the relationship between modernity and long-term environmental sustainability. More specifically, the article aims to highlight the risks associated with maintaining an ambivalent stance towards the modern project, something which has not been sufficiently addressed by the existing literature on sustainability.

2. Concorde

Following the Second World War, civilian aviation advanced into the jet age. When Charles "Chuck" Yeager officially broke the sound barrier in October 1947, many people thought that supersonic passenger transport (SST) would be the next natural step in aeroplane evolution. However, to actually construct an aircraft capable of flying at such speeds posed an immense technological challenge. In the decade that followed, a number of independent design proposals for SST were put forward, with the British thin-winged delta shaped "Type 223" being one of the frontrunners. Yet, recognizing that the underlying technology still required years of basic research and development, the British government was unwilling to provide further financial support unless the British manufacturer would find an international partner. Meanwhile in France, a French company had been working on a parallel SST design known as the Super-Caravelle which used a similar triangular wing platform. Recognizing the possible mutual benefits of cooperation, the two backing governments decided to negotiate an international treaty which mandated that British Aircraft Cooperation (BAC) and the French state-owned Aérospatiale would set up a consortium to develop the aircraft under the name Concorde. Although it would take close to fifteen years for Concorde to enter scheduled service in 1976, its development was in many ways a scientific and technological triumph [48]. Working in tandem, the French and British engineers had to overcome a number of extreme challenges in terms of metallurgy, structural integrity, and the cooling of the heated airframe as it travelled at supersonic speeds [79].

Capable of sustained flight at twice the speed of sound and at altitudes high enough to make the curvature of the Earth visible to its passengers, Concorde dramatically compressed the time-space constitution of whatever routes it operated. Instead of eight hours for a subsonic flight, it took Concorde less than three and a half hours to fly between London and New York, making same-day returns across the Atlantic possible for the first time. In 1992, Concorde circumnavigated the world in both directions in commemoration of the 500th anniversary of Columbus' first journey, setting a new world record of 31 h, 27 min and 49 s. However, already the 1973 oil crisis had fundamentally changed the economics of supersonic transportation ([24]:504). Of the more than 100 orders from dozens of airlines, only 20 aircrafts were ever built and 14 delivered, making per unit costs staggering. Despite its engineering marvel, Concorde was in many ways a stepping stone to a future that never materialized and its development costs were never recovered. Nonetheless, around the time of the millennium, Concorde was finally profitable for British Airways and was expected to continue flying for several more decades.

3. The post-Concorde world

The development of Concorde coincided with the space race, a time when it was considered common knowledge that humanity would soon move on to fill the solar system with life, that we were at the threshold of a grand new era of exploration, and that our future would be determined more by scientific curiosity than Malthusian arithmetic. In the environmental sociology literature, this expansionist worldview has traditionally been referred to as the Human Exceptionalism Paradigm [26]. Yet, by the time Concorde came into service, the Apollo Program had been terminated and manned space flights were again confined to low Earth orbit. Instead of bold space missions, the world was allocating ever more resources to the construction of nuclear warheads and the maddening logic of mutually assured destruction. To understand this shift in priorities, one has to understand the exhaustion of high-modernist narratives in general and how the world was overwhelmed by the negative environmental, social, and psychological consequences of its own development trajectory. Just as the economic stagnation of the 1970's came to undermine the post-war Keynesian consensus, the DDT scandal as documented by Rachel Carson [78] and the 1972 *Limits to growth* report [57] were both instrumental in breaking the rationalist-scientific hegemony. As the expansionist paradigm came to an end, it was replaced by notions of scarcity, insecurity, and risk [2]:1415; [9].

When Ronald Reagan in 1984 declared that it was "Morning again in America", it was easy to interpret this rhetoric as a revival of the expansionist worldview. Yet, with its conservative realism and militarism, the politics of the Reagan years actually stood in sharp contrast to the Enlightenment's belief in universality, cosmopolitanism, and emancipation. Instead of seeing education as the driver of civilizational progress [51,65], the United States took the unfortunate lead in a politics of abandonment which came to value immediate private consumption over long-term social investment. Although it would take decades for the full effects to become apparent, in retrospect it is not difficult to see the growing discrepancy between increasing consumption rates and stagnating wages (paid through debt), the millions of people being employed in low-paying "service jobs" far below their real productivity potential