

PRELIMINARY NOTES

The sublime evokes beauty, excellence, grandiosity. And at the same time it arouses fear, awe and danger. The very experience of the sublime, the magnificent and divine, triggers emotions that transcend the ordinary, confronting us with events, phenomena and objects that uncannily exceed our understanding. In an attempt to separate the beautiful from the sublime, Edmund Burke defined the latter as a 'delicious terror' (1756) in which attraction and repulsion are present at once, giving way to mental astonishment. Although Burke's *Inquiry* (1770) represents the first philosophical account of the subject, it was Immanuel Kant who provided the most thorough explanation of the sublime.

Kant distinguishes between two notions of the sublime. On the one hand, he asserts the mathematically sublime, provoked by the overwhelming size of certain elements which confronts us with our own insignificance and finitude. On the other hand he advances the idea of a dynamically sublime, evoked by mighty and terrifying forces, such as volcanic eruptions. During the 19th and the 20th centuries, the notion of the sublime was gradually extended from nature and natural forces to technology and technological objects. This encounter significantly diversified and expanded the variety of sublime experiences. Did the technological sublime therefore replace the natural sublime?

Natural landscapes became human-made architectural spaces, in which skyscrapers, bridges and city-skylines stand alongside mountains, rainfalls, and cliffs. As David Nye has shown in his pioneering book, *The American Technological Sublime* (1994), we can experience the sublimity of factories, aviation, railroads, industries, war machines, and computers. It is through the mediation of these technologies – and in particular their disruptions and failures – that our perception of nature in its many forms and guises is shaped, its processes captured and its resources functionalized. Humanity is, and always was, sustained by technologies that direct human-environment interaction. Technical components designed to establish and control cultural-natural

processes for food production, shelter, communication, and reproduction have increasingly led to a situation in which the very habitat of human populations is to a great extent technologically defined.

The ways we interpret and master the environment have greatly increased over the last two centuries, but geophysical and biological forces still have power to escape human control and containment. Earthquakes, floods, diseases – and in general those phenomena we used to refer to as ‘natural disasters’ – are at times the consequence of the inadequate use (and abuse) of science and technology, with the result that the very by-products of human action may threaten life; if not, in the case of fossil modernity’s relation to climate change, our whole civilization. What are the risks behind sublimating technologies?

This thematic issue brings together contributions that elucidate the intricate passage from the natural sublime to the technological sublime, explore their coexistence and co-extensiveness, and suggest ways in which to interpret the multiple and diffused relations between humanity, nature, and technology over the 19th and the 20th centuries. Here, sublime experiences are introduced, described, and criticised not only with regard to grand, impressive technological objects. The tremor of the Earth caused by the launch of a rocket or the possibility that we can genetically manipulate or even synthesize complex biological organisms give rise to emotions that blend fear and attraction, concern and satisfaction, danger and magnificence. Remarkably, all the authors featured here seem to collectively agree that practices of knowing, exploring, exploiting, mastering, or sensing both nature and the self through technologies could be a vehicle for both destructive and productive sublime experiences.

But the sublime can become domesticated over time, turning into what can be called the ‘non-sublime’. This is likely the reason why we accept harm to the environment in which we live with as much acceptance as we grant the natural cycles of life. However, when the sublime is felt keenly it may generate new solutions, provoke divergent thoughts, and social participation, helping to overcome the inner contradiction that characterises it.

In this issue, we seek to address different sub-themes that nevertheless share a concern with ongoing human manipulation of the environment via technological mediation. Even when technologies are produced to ‘contain’ disruptive effects, they end up re-establishing and reinforcing instead of dismantling the logic behind human control, as in the case for the peaceful use of nuclear energy, for instance.

While some contributions are grounded upon philosophical and epistemological reflections, others approach the theme from the perspectives of the history of science and technology. Others still mix literature and environmental studies as well as anthropology with digital cultures and the arts. Against

this backdrop, all contributions discuss sublime experiences as vivid manifestations of historical and technological transitions, and take into account a variety of frameworks and topics: from the industrial to the post-industrial age, from the nuclear technological complex to remote sensing technologies, from digital cultures and expanded cinema, to biological manipulation and experimental settings.

In the opening piece, Benjamin Steininger's *Petromoderne Petromonströs* takes us to a refinery just outside of Vienna and straight into the "monstrous" sublime of the petrochemical industry. Human-made petro-landscapes do not hide but directly reveal the contemporary agency that becomes evident in the collapse of geological and ultrashort time scales as well as the convergence of molecular and planetary scales within which the exploitative technical processes of the fossil fuel regime take place. Hydrocarbons, Steininger argues, constitute a "companion substance" of the late anthropos and tracing their mobilization is a powerful means of understanding the decentralized position of the human in the age of petromodernity.

Donatella Germanese's article '*Una forza universale incomparabile*': *Petrolio e sublime nelle riviste aziendali degli anni '50* discusses how oil companies used the artistry of industrial magazines to promote a sublime image of fossil fuel use to the reading public. By showing and celebrating petroleum as the valuable distillate of past geological epochs – and the only viable way to achieve national wealth – oil companies marginalized the environmental consequences of their operations and sought to disenfranchise the activities of ecological movements of the 1970s.

Andrea Candela's essay *Nuclear Energy and the Sublime: A Visual History from the Early Italian Anti-Nuclear Movement (1975-1979)*, shows a range of archival images which anti-nuclear movements employed as instruments of counter-information to support protests against the development of nuclear reactors. The relationship between the sublime and the Atomic Age is made tangible by those attractive representations that depict the 'peaceful atom' at the same time as triggering fears about its possible misuse in both the military and civilian spheres. The *médiasphère* spanning science fiction, comics, novels, popular art, journals, and movies shaped public's expectations and perceptions, evoking, in turn, contradicting emotions that demonstrated an 'embodiment' of the relationship between nuclear power and the sublime.

Anna Storm further investigates the sublime of nuclear power. In her essay titled *Atomic Fish: Sublime and Non-Sublime Nuclear Nature Imaginaries*, Storm combines the notion of nuclear technology as something 'exceptional' within the sociotechnical imaginary of 'containment'. This fluctuation is considered an expression and condition of the contradictions underlying the

nuclear technological sublime. Atomic fish and nuclear energy production are framed as a unique feral ecology; an infrastructure that turns the sublime into the non-sublime, namely the mundane imaginary of coastal Swedish nuclear power plants.

Remote sensing technologies have enabled researchers to collect visual, physical, chemical, and biological data from disparate *milieus*, across different scales, and for a number of different purposes. Along these lines, Nina Wormbs's *Sublime Satellite Imagery as Environing Technology* reveals how images of the planet that were acquired through satellites offer a key demonstration of the act of 'environing' nature with the aid of technology. In doing so, her work invokes a renewed, 21st century feeling of the sublime. The images produced by satellites at an 'inhuman scale are awe-striking', she notes, and can be seen as an example of Kant's mathematical sublime. However, they combine the technical grandiosity of the Earth seen from beyond with the environmental sublime of a rapidly changing climate, and thus they reveal vulnerability of the earthly habitat as it is monitored in ultra-high resolution.

In their contribution, Ksenia Fedorova and Marc Barasch also take on the global perspective, albeit one of a different kind. *Mission to Earth* brings into focus *terrestrial proprioception and the cyber-sublime*. Far from being related to magnificent, industrial objects, the post-modern sublime presents itself as a more 'fluid' and sophisticated experience made possible, among the other things, by the emergence of advanced cybernetics and information technologies. Fedorova and Barasch argue that our feelings, our sense of the self, and our relation to the surroundings is being increasingly reshaped by telematic technologies such as Google Earth, or augmented reality. They pose the question, what would be the result of orientating this media towards the potentiation of our environmental embeddedness, recreating that ancient state of harmony between humanity and nature? The co-extensiveness of humanity and the global environment is scaled down in Timothy Barkwill's article, which discusses expansive tendencies in Cinema. *Approaching the Sublime: Exploring the Aesthetic Ambitions of Expanded Cinema* brings the sublime into the domain of aesthetics, in a description of 'synesthetic cinema'. Drawing on the work of François Lyotard, the article discusses the challenges of grasping the ungraspable as a way to surpass the limits, in an attempt to reach the sublime.

Be it a technological envelope, a layer or just an additional *sphere*, human directed technology has not only smeared the iconic blue marble, but importantly, has interfered with the stability of the Earth-system, endangering the biosphere and exposing humanity to unprecedented risk. Flavio D'Abramo zooms back to the biological world and back again to the microscopic per-

spective offered by molecular biology. In doing so, he attempts to overturn Kant's mathematical sublime. Entirely reduced to laws of physics and chemistry by certain biologists, life became an object of control through scientific, technological interventions aiming at governing human evolution. *An Appraisal of the Biological Sublime between Eugenics, Epigenetics and the Political Economy of Life Sciences* unveils the dramatic, hidden linkage between the rise of molecular biology and eugenic policies in the US in the first half of the 20th century, and shows how similar principles are still fundamental parts of more recent developments in epigenetics.

The threat of a thermonuclear war between the US and the USSR in the second half of the 20th century marked the emergence of a particular kind of sublime experience epitomised by the power of the bomb, fear of mutual annihilation, and imminent global climatic catastrophe. *Towards Another Sublime: Away from the Aesthetics of Destruction* problematizes the transition from the sublime as a response to overwhelming natural events to the sublime as co-extensive with human-made technological power. In this contribution, Pietro D. Omodeo and Lindsay Parkhowell argue that Kant's *Critique of the Power of Judgment* unveiled a particular aesthetic of destruction, which technology would later be able to fulfil, and in so doing promotes a form of democratic aesthetics as an antidote to the aesthetics of the war.

In *What Comes After the Technological Sublime?*, the last essay in this issue, David Nye retraces the lines of argument in his previous work on this topic in order to identify new objects that might provoke the technological sublime and to ask why these new technologies are understood in this way. The list of articles that this issue contains already suggests some answers. Factoring in the inner contradiction that is at the very core of the technological sublime, Nye tries to bring them all a step further. In the face of radical change and with a planet entering a new geological epoch – the Anthropocene – as a result of myriad technological incursions, the very idea of technology has to be rethought and newly projected¹.

GIULIA RISPOLI
CHRISTOPH ROSOL
grispoli@mpiwg-berlin.mpg.de
rosol@mpiwg-berlin.mpg.de

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